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CANADIAN AGRICULTURAL PRICE PROBLEMS AND POLICIES: A COMMENTARY

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THIS issue of the Journal contains several articles which deal in considerable detail with some of the more significant Canadian market and price regulating programmes. The specific programmes selected are, generally speaking, currently operative and of fairly recent origin. While the list chosen constitutes only a major sample of existing programmes and makes no attempt to include those which have been attempted at various times in the past, it does serve to illustrate the variety of approach adopted as well as the special and general character of the problems encountered and principles employed. The present paper is intended to act as more or less of a supplement to the other articles. Instead of discussing any particular programme or programmes as such, it aims at drawing attention to certain general factors or influences which help to explain why certain policy choices have been made. To a considerable extent it is a statement of the general underlying influences at work, the general methods used and the general results obtained. Its central thesis, if such it may be called, is that the special attempts which Canada has made to influence agricultural prices, either directly or indirectly, have been in large measure dictated by the special set of influences and circumstances which have prevailed. This is not to say that the steps taken were the only ones that could have been taken in every case. All that is suggested is that there has been a pronounced correlation between the special situations in which Canada has been placed and the kinds of action programmes decided upon. While this is likely to

be true to some degree of every country, it has been particularly so in the case of Canada.

The Dependence on Exporting

The large scale dependence on export markets is undoubtedly the most important of the several underlying factors conditioning Canadian policy. While this dependence has always been most pronounced in respect to wheat (around 70 per cent of production had to be exported), it has been very marked in the case of several other major products. It has always been necessary to export significant percentages of livestock and livestock products and such things as apples, potatoes and tobacco. Indeed there are very few products which have not been on an export basis to some degree at certain seasons at least. Whatever the situation regarding any specific product, a very large part of the total of Canada's agricultural production must find an export outlet.

This dependence on exporting leads naturally to several conclusions in respect to price policy. The first is that Canadian farmers as a class must be prepared to accept prices in line with those available in the world outside. Under normal conditions Canadian prices must tend to coincide with world prices. A second conclusion is that, so far as the great bulk of Canadian production is concerned, it is impossible to raise the price merely by imposing a protective tariff since importation does not normally occur. In the third place, the necessity of finding large export markets will virtually compel Canadians to keep costs and prices as low as possible in order to ensure success in international price competition. Also, any hope of price improvement lies in the direction of demand expansion rather than supply contraction. It is for this reason, of course, that any general policy of production curtailment of Canada's major products must be considered as part of an internatioual policy. Finally this conclusion regarding the desirability of expanding demand rather than contracting supply tends to emphasize the wisdom of supporting every programme that seems calculated to maintain or expand demand. This goes far to explain why Canada has given such active support to the international trade agreement programmes both pre- and post-war, why she has been so anxious to consummate definite export contracts, and why her farmers have recently been so strongly behind the international commodity agreement idea. In the final analysis the strongest motivating force

in Canadian policy-making today is probably the belief amounting to a conviction on the part of those at the top level—in both government and farm circles—that it is not possible for agriculture or any other section of the body economic to secure satisfactory prices or levels of prosperity in the absence of an internationally expanding economy.

Relative Importance of Agriculture in the Economy

Even though the large dependence on exporting makes it necessary to think in terms of selling at world prices, Canadian farmers might well receive the equivalent of considerably higher prices were the non-agricultural sections of the economy capable of contributing sufficiently to this end. Price additions might take the form of supplementary payments or direct or indirect subsidies. In any such programme, however, it is obvious that the extent of the contributions on behalf of agriculture must depend upon the relative importance of the agricultural industry in the national economy. If agriculture were a relatively insignificant part of the total picture it might receive sizable contributions from the non-agricultural sectors without seriously affecting the income status of the latter. The truth of the matter is, however, that, regardless of the basis of measurement used, agriculture represents a very large part of the country's economic life even though its relative importance has been decreasing in recent years. To provide Canadian farmers with anything really significant in the way of price assistance would require an extremely large total contribution and much more than the rest of the economy could afford or be expected to give. Just how much it could afford is something that is extremely difficult to decide except in the most arbitrary sort of fashion. One possible indication of the limited extent to which agricultural prices might be added to in this way is seen in the total amount of funds provided for price stabilization operations under the Agricultural Prices Support Act.[1] That Act provides for a revolving fund of 200 million dollars. When it is remembered that this amount has to finance the price stabilization operations of all products other than wheat; that during the transitional period in which the Act was intended

[1] 8 Geo. VI, c. 29, An Act for the Support of the Prices of Agricultural Products during the transition from War to Peace, Assented to Aug. 15, 1944. For details of operations under this Act see the article by A. H. Turner in present issue of this Journal.

to be operative the government did not anticipate additional expenditures in respect to wheat; that it was apparently not thought possible or desirable to make even this amount available for more than a limited period; and that the implementation of this stabilization programme tended to coincide with the elimination of other previously-existing agricultural price subsidies, one can get some idea of its price-supporting value. So long as the number of commodities requiring price assistance is small enough and the period during which the assistance needed is short enough the amount of funds provided can render a real degree of price support.[2] The situation would be very different, however, were a general and severe drop in demand to occur making it necessary to support the prices of all or a large number of commodities simultaneously and for extended periods. Just how far 200 million dollars would go in raising prices under such circumstances can perhaps best be realized by comparing this figure with the total income from farm products exclusive of wheat in recent years.

This apparent fact that the national economy simply cannot afford to support farm prices to more than a very limited extent has several important implications from the standpoint of price policy. Perhaps the most important of these is that, in periods when prices in general are low, there would appear to be no possibility whatever of the Canadian government undertaking to keep farm prices at parity levels as has been done in the United States. There would simply not be enough money forthcoming to make this possible. For the same reason it would not be possible to ensure prices in line with cost of production as in the United Kingdom. This is probably another way of saying that Canadian farm price floors will probably have to be kept at relatively low levels for purely financial reasons. Another important point is that, under anything like emergent conditions, the Canadian price authorities may well be forced to choose between spreading the available funds over a long list of products or restricting their price support aid to one or a few key products particularly susceptible to price depression. Anyone familiar with the various types of governmental assistance given to Canada's wheat-producing enterprise from 1929 on cannot but be impressed with the extent to which the use of funds may have to be concentrated.[3] In that case an absolutely key enterprise in

[2] *Ibid.*

[3] For a full description and well considered opinions regarding these activities readers should consult the following articles: *Public Policy in Relation to the Wheat*

the agricultural and general economic structure was in special need of help partly because it was subjected to abnormally adverse weather conditions; partly because the commodity concerned was universally produced and was characterized by a highly inelastic demand; partly because such a large percentage of the product had to be exported, and partly because the producers were so largely dependent on the income from a single commodity. Still another consequence of this limited supply of price-support funds is the necessity of using the funds in such a way as to obtain the greatest possible price-raising benefits. Moreover, since the funds are likely to be small in proportion to the price-supporting requirements, particular care may have to be taken to see that the methods of raising and spending them are the most justifiable methods in the minds of contributors. It might well be, for example, that the latter would be more willing to support a food allotment plan aimed at raising the nutritional levels of low-income consumers than one designed to give direct cash payments to farmers. Whether a given expenditure on a food allotment programme would have a greater net effect in supporting farm prices than direct cash payments to farmers would also have to be seriously considered.

Specialization and the Dominance of Wheat

As is well known the specialized production of spring wheat in the three Prairie Provinces has long been a major enterprise in Canada's agriculture. The reasons for this specialization are too familiar to the readers of this Journal to require reiteration here. Suffice it to say that the soil and climate combined with the natural topography of this area provide an unusual opportunity for efficient production of a high quality product and, in considerable sections of the area, apparently do not invite favourable alternative opportunities. The general result is that, for the area as a whole, receipts from the sale of wheat have long formed and continue to form the main source of farm income. It is not surprising, therefore, that the farmers in these provinces have been particularly concerned about wheat-marketing methods and wheat prices. Speaking summarily it may be said that for the first three decades

Market by H. L. Griffin in the Canadian Journal of Economics & Political Science, Aug. 1935; *Observations on Canadian Wheat Policy since the World War* by H. S. Patton in the May 1937 issue of the same Journal; *Wartime Wheat Policy in Canada* by H. S. Patton in the Nov. 1942 issue of this Journal; *Dominion Aids to Wheat Marketing, 1929–39* by V. C. Fowke in the Aug. 1940 issue of Canadian Journal of Economics and Political Science.

of the present century farmer effort was concentrated on finding ways and means of obtaining the largest possible part of the world price at which the wheat finally had to be sold.[4] During the 1930's emphasis shifted to ways and means of maintaining the marketing methods that had been developed and securing from the federal government sufficient financial aid to provide at least a semblance of security and stability. In very recent years the real drive has been in the direction of a reasonable degree of price and income stabilization.

It is important to note that throughout this half century of uninterrupted effort governments, both provincial and dominion, have been called upon to render assistance. The assistance given has varied all the way from the appointment of Royal Commissions, provision of grain-marketing legislation, providing loans for the construction of farmer cooperative elevator systems, actual building and operating of country and terminal elevators, guaranteeing bank loans for cooperatives, undertaking large scale purchase of wheat futures in an attempt to prevent wholesale price reductions, guaranteeing minimum prices for wheat, making cash grants in specially distressed areas and, in recent years, undertaking to market all the wheat under government auspices and arrange annual or longer term contracts for the sale of wheat. This extensive degree of governmental intervention has not been undertaken without good reason. For one thing it must not be forgotten that the successful and large scale development of agriculture in the Prairie Provinces has long been regarded by successive Canadian governments as an absolute prerequisite of general Canadian prosperity. To a very large extent an economically healthy condition on the part of western Canadian farmers has been regarded as the best, and indeed only, assurance of prosperity throughout the nation. Western development was deliberately sponsored by the government not only because it was expected to supply a field for investment and business for those providing financial and transportation services but also because a major market was needed for industrial goods manufactured in the older Central Provinces.[5] In the second

[4] For a complete and chronological account of the development during these years see *Agricultural Cooperation in Western Canada* by W. A. Mackintosh, published in 1924 by the Ryerson Press. Also, *Grain Growers' Cooperation in Western Canada* by H. S. Patton, Harvard Univ. Press, 1928.

[5] See address entitled "Western Agriculture in the Canadian Economy" by W. A. Mackintosh in Proceedings of the Conference on Markets for Western Farm Products, Dec. 12, 1938. Obtainable from King's Printer, Govt. of Manitoba, Winnipeg.

place the very fact that dependence on wheat in the West has been so pronounced has resulted in a special need and demand for government assistance. The need has been great because wheat producers were a long distance from their final market; because, being specialized, they have been unable to spread their risk; and because the demand for wheat is extremely inelastic. The demand has arisen partly because specialists are naturally more interested in the marketing of their special crop than general farmers are in the marketing of any one of their several products; partly because producers felt themselves subjected to glaring marketing abuses and completely lacking in bargaining power; partly because they have realized the government's dependence on their political support, but mainly because they have encountered severe economic adversity.

In view of the current Canadian interest in agricultural price stabilization, it may be in order to indicate the special interest of the wheat growers in the concept together with the basic reason for this interest. The wheat growers have pioneered the way, supplied the real spark and applied consistent pressure in respect to price stabilization. While there are probably several reasons for this, including their large numbers and effective organization, the main one undoubtedly is that they, more than any other group in Canadian agriculture, appreciate the possible maleffects of extreme price instability. Moreover the experience during the early 1930's has convinced them and the government as well that, under conditions of drastic and persistent price decline, it is entirely impossible to operate a pooling plan in the absence of a minimum price guaranteed by the national government. Since pooling does serve to mitigate seasonal price fluctuations the great majority of producers have been anxious to maintain this principle in operation.

If the experience in the early depression years proved the necessity of government financial help in order to preserve pooling, it also made it clear that even the national government was unable to raise minimum prices above very low levels. The knowledge that there are definite and early limits to the degree of price support which Canada unaided can give is at least partly responsible for this country's readiness to participate in such undertakings as the four-year wheat contract with Britain or the recently negotiated international wheat agreement. This willingness represents a hope that what she cannot hope to do alone she may be able to do with the aid of other countries. There is, of course, another and very important consideration which undoubtedly helps to explain why

Canadian governments have been willing to experiment with various methods aimed at giving wheat producers a greater degree of economic stability. It so happens that the basic character of Canada's resources virtually compels her to undertake large scale production of a few products which have to be disposed of, for the most part, in foreign markets. Moreover they are products which are particularly susceptible to immediate and pronounced drops in demand if and when international economic conditions become unfavourable. The general result is that the economy as a whole has been found to be inherently unstable. In view of this and because of the truly integral position which the wheat production enterprise occupies and because it is in many ways the most exposed and unstable of all Canadian activities, any programme that seems likely to ensure a greater measure of stability in that sphere has been looked upon as being in the national interest. Furthermore the realization that a really serious drop in wheat prices if continued is bound to result in wholesale transference from wheat growing to production of farm products which other Canadian farmers are producing and for which there is only a limited market may help to suggest why the government has felt it was good business to devote a major part of its total stabilization effort to the wheat situation. The attempt to bolster wheat prices has been, to a very considerable degree, an attempt to bolster farm prices in general. Finally it may be said that anything in the way of price stabilization assistance which the government may find it possible to give is looked upon as something which may at least partially offset the price-raising effects of the national protective tariff policy to which the wheat growers have been particularly subjected.

Some Effects of the General Wartime Price Control Policy

Throughout the period of the Second World War Canadian authorities enforced a programme designed to maintain specific relationships between certain prices and to prevent serious increases in the general price level. As is well known the implementation of this price control policy required large scale substitution of direct and arbitrary regulations for the control normally exercised by the price system. When the policy was instituted in September 1939 and for nearly two years after, farm prices were low in relation to prices of the things farmers had to buy. Moreover this general relationship had existed for many years prior to the war. Between

the start of the war and the application of the general price ceiling in the late autumn of 1941 the rise in farm prices, on the average, was comparatively small and the net price position of farmers had actually worsened. Despite farmer protests the actual prices were kept at or near the ceiling levels which prevailed at the end of 1941, although definite and sizeable increases were permitted in a few cases where continuance of existing prices would have meant obvious injustice. For the most part any additional economic inducements took the form of direct and indirect subsidies and it was not until after the war, when price controls and subsidy payments were gradually eliminated and the general world scarcity caused farm prices to rise, that farmers received much extra remuneration in the form of increased prices in the true sense. Moreover the general policy, when permitting price increases or granting subsidy payments during the war, had been to offer only that amount of inducement needed to obtain a desired volume of production.

While farmers benefited financially as the war period proceeded and as the volume of sales and amount of subsidy payments increased, they never became really reconciled to either the subsidy idea or the concept of a ceiling on their selling prices. Realizing that subsidy payments were bound to disappear and believing that the price control policy had prevented them from receiving anything like as much returns as they would have received under uncontrolled price conditions, and realizing also what had happened to the price of farm products after previous wars, farmers began to press for some degree of protection against future possible price declines. Their attitude is well illustrated by the following quotation: "If Canada can maintain a general price ceiling in wartime to save us from the disasters of out-of-hand inflation, our farm people believe that in the postwar period Canada can just as logically establish and maintain a general price floor to save us from equally disastrous deflation."[6] This statement makes it fairly obvious that the farmers were thinking in terms of postwar compensation for something that had been denied them during the war. It also suggests not only that they believed it technically possible for the government to give this compensation but that to attain this result it was quite in order, if necessary, for the government to employ

[6] From an address delivered in 1942 by H. H. Hannam, President of the Canadian Federation of Agriculture. The fact that this statement was made as early as 1942 is in itself significant.

marketing techniques and a degree of arbitrary regulation corresponding to that of the war period itself. Indeed the inference is that the postwar period might well constitute a peacetime emergency warranting any degree of governmental intervention that might be found necessary and useful.

At this point one might enquire as to the soundness of the logic in the quotation cited above. This seems desirable inasmuch as there has never been any doubt raised in regard to the matter so far as this writer is aware and because the success of specific programmes which may be partly due to its unquestioned acceptance might well depend on the validity of this basic claim. It is not possible, due to lack of space, to discuss the question here in any detail. One may, however, raise two or three questions. For one thing is it reasonable to expect that Canadians generally would actually submit to anything like the wartime degree of government regulation in order to meet a purely economic peacetime emergency? In particular would they submit to the wartime levels of taxation in order to provide funds for maintaining employment, purchasing power and farm prices? In the second place is it safe to assume that, in a period when "disastrous deflation" threatens, there will be as much national income available to bolster falling prices as there was in wartime to pay price subsidies? Of course the answer to these questions may be that no really pronounced degree of price support was ever contemplated and that the programme of financing would therefore be entirely feasible. Nevertheless these questions would seem to warrant some consideration.

Most of the special agricultural price support programmes thus far provided are outlined in some detail in other articles in the present issue of this Journal. They include the current four-year wheat agreement, the operations under the Prices Support Act of 1944, the recently-arranged plan for marketing coarse grains through the Dominion Wheat Board and the 1949 enabling legislation which gives provincial marketing boards the legal authority to operate in interprovincial and international trade.

In respect to the last-mentioned legislation it may be said that, ever since the federal Natural Products Marketing Act was finally declared unconstitutional in early 1937, organized agriculture has been making annual requests for something that would act as a substitute and the 1949 legislation has been designed for that purpose. Just what use will be made of it remains to be seen. The

insistent demand for such legislation, however, requires a word of explanation. The explanation is probably many-sided. Many of the commodities involved in the schemes which operated under the original Natural Products Marketing Act of 1934 and those more recently dealt with in schemes operated in some of the provinces are consumed mainly if not entirely in the domestic market. This might suggest that in some cases there has been a desire to raise the price by limiting the supplies offered for sale. One cannot but feel, however, that the central interest has lain in the possibilities of securing a larger part of the true supply and demand price. To this end quite a few of the schemes have attempted to secure whatever benefits collective bargaining may bring by arranging prices through negotiation. Where arranged in advance of production these negotiated prices have acted as forward prices as well. In other cases an attempt has been made to secure higher average prices by stressing more orderly marketing. In still other cases the emphasis has been on regulating the market in such a way as to raise the average quality, replace inefficient by more efficient methods, and generally reduce the marketing spread. Generally speaking it would appear that greatest success has been achieved where no really scientific market organization had previously existed, or where the products concerned were produced in limited areas and by relatively few producers or where the producers were strongly organized and ably led.

Much remains to be said regarding the influence of the general wartime price policy on war and post-war agricultural stabilization efforts. There can be no doubt, for example, that the mere implementation of that policy did much to condition the minds of farmers and governmental authorities as well to the stabilization idea together with the possibilities of its successful application. It is also true that farmers, by and large, were favourably impressed by the wartime practice of announcing definite prices well in advance of production. And it should not be forgotten that the wartime plan to encourage production of coarse grains, livestock and livestock products rather than wheat in the Prairie Provinces along with the determination to prevent increases in the cost of living index go far to explain why the government decided to take complete charge of wheat marketing in the autumn of 1943. At that time wheat futures prices were rising rapidly and would undoubtedly have risen much more had open market dealings been allowed to continue.

Effect of the "National Policy"

In 1878 the government of Canada adopted what has ever since been known as the National Policy. Its aim was the gradual development of a more balanced type of economy. To encourage secondary industries the government undertook to provide a very considerable degree of tariff protection. One general result of this policy has been that agriculture, which has, generally speaking, been unable to use the tariff to raise its selling prices, has had to pay prices for the industrial goods which were very considerably higher than would have prevailed in the absence of the tariff protection. The main significance of this circumstance from the standpoint of farm price policy is that farmers, in search of a net improvement in their price position, have felt impelled to place special emphasis on ways and means of reducing their buying prices. Price reduction has been sought partly through tariff reduction and partly through an expansion of cooperative purchasing. To some extent efforts have been made to offset the high prices with reduced transportation rates. Whatever the method, the point to remember is that reduction of the prices which farmers have to pay has been and still is a most significant part of farm price policy.

Some Final Observations

While the most important factors influencing price policy have probably been mentioned, there are undoubtedly others of some consequence. In particular, Canada's extreme and continued reliance on the British market has no doubt forced this country at times to adjust policies in line with British policies and requirements. For example, the adoption of fixed annual prices in the Canadian-United Kingdom contracts during recent years, while partly dictated by the special wartime needs, has also represented an adjustment to the bulk purchase policy advocated and practised by the present British government. Another entirely different sort of influence that might be mentioned is the great size of the country and the wide diversity of farming interests and enterprises. Whether a price policy should favour growing all the feed grain in the West or feeding as well as growing it in that area or aim at discouraging the growing of potatoes in Ontario and encouraging the growing of them in the Maritimes are among the many unsettled questions in the minds of Canadian policy makers. In connection with this matter the heavy transportation costs resulting from the tremendous haulage distances constitute a serious obstacle to rapid and effec-

tive geographical specialization. A final factor which exerts some influence over farm price policy is the particular attitude which has prevailed and the course which has been followed when dealing with the anti-combine problem. Canada's plan of action in this connection is in some respects unique. That, however, is a whole story in itself.[7]

In the light of the foregoing it may be of interest to note the most recent declaration of price stabilization policy of the Canadian Federation of Agriculture which is the official mouthpiece of organized agriculture. In this declaration prime emphasis is placed on the need of maintaining full employment and maintaining demand abroad as well as at home.[8] While public works are advocated as a means to this end, it is seriously suggested that prices should be supported by subsidizing low income consumers. In fact details of a possible food allotment plan are provided and the view is expressed that no other means of support would be required in the case of products consumed domestically. For those mainly dependent on the export market price floors are recommended. Such floors, however, are regarded as simply one more line of defence. The parity price concept is also accepted and a specific Canadian method of calculating parity is outlined. Of special significance is the suggestion that the government should not undertake to pay floor prices that are more than 80 percent of the parity level. The reason for this is not that the government could not afford to pay more but rather that any higher price would encourage more production than could be disposed of and thus lead to production control measures. The general idea would be that the floor price should be high enough to protect the farmer against actual cash loss. Since it would not be sufficient to cover normal overhead as well, it seems evident that the floor price is being thought of as short run protection against the extremely low prices likely to prevail during a depression or emergency period. That this list of suggestions should be forthcoming during a period when most farm prices are at or near record levels is perhaps the best possible evidence that the various existing stabilization measures are expected to have a limited life at best.

[7] For an authoritative account of Canadian anti-combine policy see *The Control of Competition in Canada* by L. G. Reynolds, Harvard Univ. Press, 1940. Additional information may be obtained in Report of the Royal Commission on Price Spreads, published 1935 by King's Printer, Ottawa.

[8] A complete outline of these proposals was given by the Federation's economist, Dr. E. C. Hope, at the annual convention held last January. At this convention a resolution embodying the proposals was presented to and endorsed by the delegates.

FEDERAL MARKETING AND PRICE SUPPORT LEGISLATION IN CANADA

A. H. TURNER[1]
Canadian Department of Agriculture

THE vast expansion of governmental control in the economic field which has taken place during the war is without parallel in the history of the world. Nobody doubts that in the difficult period of transition that must follow immediately upon the declaration of peace, some portion, at all events, of the control must be retained but on the question of how far similar control is appropriate as a permanent peace time policy, there is acute controversy."[2] Professor Pigou made the above statement at the end of the First World War. Government intervention in marketing of agricultural products is not new. For many years there has been controversy over the degree to which such control is desirable. The following opinions were expressed at the annual conference of the American Farm Economics Association held at Laramie, Wyoming in August 1949.

"The only way to avoid governmental controls over agricultural production in the effort to maintain farm income in relation to the income of other groups is to find some way of eating surpluses. Falling prices have often caused production increases instead of decreases."[3]

"Shall we look to the government to maintain a given price structure for agriculture indefinitely without regard to conditions in the market? If so, we cannot escape giving to the Government the controls of production and sale which are needed to make such prices effective."[4]

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[1] Senior Economist, Economics Division, Marketing Service, Department of Agriculture, Ottawa.

The author wishes to express his appreciation to other members of the Department of Agriculture and to C. V. Parker of the Dominion Bureau of Statistics for their assistance in preparation of this article.

The article is intended to be mainly descriptive and does not attempt to appraise or analyse the impact of the program outlined except by occasional general suggestions.

[2] A. C. Pigou, "Government Control in War and Peace, p. 363, *The Economic Journal*, Vol. XXVIII.

[3] *New York Times*, August 17, 1949. Press release of statement made by J. W. Fichter of Ohio State Grange.

[4] *New York Times*, August 17, 1949. Press release of statement made by Dr. O.B. Jesness, University of Minnesota.

In this setting, a discussion of Canadian marketing and price support legislation will indicate the extent to which Canada has agreed to assist agriculture through governmental legislative marketing aids and by government action designed to lessen the instability of farm product prices.

Marketing Legislation[5]

Marketing legislation in Canada has been a matter of interest and discussion for many years and more particularly since World War I. Early legislation and marketing organization was related mainly to voluntary cooperative marketing, although the first Wheat Board in Canada was established during World War I.[6] Appropriate legislation for grading and inspection of major agricultural products became general in the 'twenties. British Columbia had entered the field of greater regulation of marketing practices in 1927 and during the nineteen-thirties most of the provinces seriously considered or actually passed milk control legislation and regulations of one kind or another.

Agricultural Products Co-operative Marketing Act, 1939[7]—After the Federal marketing legislation known as the Natural Products Marketing Act was declared ultra vires of the Parliament of Canada in 1937, the government of the day decided to assist orderly marketing by the encouragement of pools which would return to the producer the maximum sales return for his product less a maximum margin for handling expense agreed upon in advance.

In 1939 the Government of Canada passed the Agricultural Products Co-operative Marketing Act and the Wheat Co-operative Marketing Act. The latter has only been used in one year but the former Act, which covers the marketing of all agricultural products except wheat, has been used to a greater or lesser degree from time to time during the intervening years.

The purpose of these Acts was to aid farmers in organizing and

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[5] For further details on Agricultural Marketing Legislation up to 1939 see Agricultural Marketing Legislation, Marketing Service, Department of Agriculture, Ottawa, 1939.

[6] The marketing of wheat and the operations of the Canadian Wheat Board are described in another article of this series.

[7] For further details about this Act, see W. F. Chown, "Agricultural Products Co-operative Marketing Act," 1939, p. 5, *Economic Annalist*, Vol. XVII, No. 1, Department of Agriculture, Ottawa.

administering marketing pools for the orderly marketing of their products.

The Government would undertake to guarantee a certain minimum initial payment to the producer at the time of delivery of the product as well as a margin for handling, with sales returns being made to producers on a co-operative plan. This objective was to be accomplished under the legislation by providing for the guarantee of initial payments made for any agricultural products up to 80 percent of the average of the previous three years' prices, the exact percentage to be recommended by the Minister of Agriculture, who would enter into an Agreement with the selling agency for the product. The payment to the producer was to be made through the sales agency on a graded basis at the time of delivery of the product. It is probably correct to say that voluntary co-operative pools, as contrasted with voluntary co-operative purchase and sales agencies returning patronage refunds, were few in number in Canada in 1939. This was partly due to the difficulties which confronted the Wheat Pools during the early 'thirties, following their high initial payment on the 1929 wheat crop.

According to the Act, a co-operative plan means an agreement or an arrangement for the marketing of agricultural products which provides:

1. for equal returns to primary producers for agricultural products of like grade and quality;
2. for the return to primary producers of the proceeds of the sale of all agricultural products delivered thereunder, produced during the year, after deduction of processing, carrying and selling costs and reserves, if any;
3. for an initial payment to primary producers.

When a farmer or rancher delivers products for sale on such a basis he surrenders title to the product and acquires in exchange a fractional interest in a pool and will receive exactly the same return as other participants for the same grade and quality.

Under the Act agreements may be made by the Minister with co-operative associations, processors of agricultural products or selling agencies authorized to act for one or more co-operative associations, one or more processors or one or more associations and processors. It has been usual to make agreements with a selling agency of the latter type if one marketer does not handle a substantial portion of the product in the area.

Agreements under this Act have been made with respect to the marketing of honey, onions, potatoes, oats, barley, flax, rye, corn, fox and mink pelts and the following seeds, alfalfa, crested wheat grass, western rye grass, timothy, red clover, alsike clover, sweet clover and peas.

Initial payments approved by the Minister of Agriculture have ranged from 30 to 70 percent of the average of the last three years' prices compared to a possible 80 percent authorized under the Act.

Thus far the Government of Canada has not suffered any loss under this Act except with respect to fox pelts, which product tends to be somewhat unpredictable with respect to its annual market, due to its dependence on the whims of fashion. Serious difficulties have accompanied the marketing of fox pelts since World War II, and even though initial guaranteed advances were relatively low as a percentage of three years' prices, some loss has been sustained.

This experience indicates that any service to agriculture rendered by this Act has been at relatively small expense to the taxpayers of Canada except for small administrative expenses, which in most cases have been taken care of as part of day-to-day administration of the Department of Agriculture. No additional staff has been acquired for the specific purpose of administering this Act.

It would appear that the Act has been or is expected to be of greater service at the present time since the number of agreements under it has increased in 1948 and will likely show a further increase in 1949, based on the number of applications or expected applications by the end of August 1949. One co-operative selling agency engaged in the marketing of seeds and servicing more than a dozen local co-operatives has used the Act each year since 1939.

In administering the Act, the Minister has required that, as far as possible, products should be marketed annually or in a shorter period of time, in order that pools might be closed out promptly. However, in a number of cases, stocks have been carried over for more than one year and in such cases the Minister has usually required that definite arrangements for the marketing of stocks carried over should be made before a new agreement is completed. This question of carry-over and the length of the marketing pool may be the one which will give the greatest administrative difficulty under this Act during periods of declining price levels. The government may find itself in the difficult position of having to

hold, through a selling agency, large stocks of products while, unless a new agreement is granted, the selling agency or some other agency representing similar producers may come into the picture and finance the current year's crop without government financial assistance and at the same time compete with sales of the product being marketed under government guarantee. The government has as its safeguard against such possibility the fact that it does not pay any deficiency which may arise in the pool until after the pool has been closed out and all of the product sold. Further, the financing agency (usually a bank) becomes an interested party and it is not likely that it will consider further financing of the crop since the Minister is given some discretionary powers with respect to the termination of any agreement. The financing agency will likely try to work with the government to obtain greater security in financing and marketing of the particular products in the future.

Another problem concerns the possibility of producers' groups attempting to use the Act for the purpose of price support. The government has made it quite clear that the Act is not intended as a means of supporting prices but for assistance in financing the orderly marketing of agricultural products on a voluntary pool basis. As long as the administration of the Agricultural Products Co-operative Marketing Act and the Agricultural Prices Support Act (which is described later in this article) are as closely related within the Department of Agriculture as they are at present, this problem is not likely to occur in any significant degree.

Agricultural Products Marketing Act, 1949—With the enactment of marketing Acts in most provinces, after the Natural Products Marketing Act, 1934 had been declared ultra vires of the powers of the Government of Canada, and the development of provincial boards and schemes under these Acts, as well as government export boards in wartime, little or no further pressure was placed on the Government of Canada to pass further marketing legislation of this type until after World War II. During the war years the government, with the cooperation of producers and trade organizations, handled the marketing of the main agricultural products under a system of wartime boards set up to direct the production and allocation of products, to handle export contracts, and to control prices.

As soon as World War II was over and government boards and controls began to disappear, producer groups again began urging

federal legislation with respect to organized marketing. Some of the wartime export boards have been continued and are still operating in the post-war period, under the authority of the Agricultural Products Act 1947, with the main purpose of handling and ensuring fulfilment of export contracts with other governments. This Act expires March 31, 1950. Depending on the basis of new export contracts the Government may at that time expect producers and the trade to have developed the necessary marketing organization to operate on their own behalf with the assistance of the agricultural marketing legislation which already exists.[8] The Agricultural Products Marketing Act was passed in April 1949 and provided as follows:

"The Governor in Council may by order grant authority to any board or agency authorized under the law of any province to exercise powers of regulation in relation to the marketing of any agricultural product locally within the province, to regulate the marketing of such agricultural product outside the province in interprovincial and export trade and for such purpose to exercise all or any powers like the powers exercisable by such board or agency in relation to the marketing of such agricultural product locally within the province."

In this way it is possible through marketing boards to provide producer groups within a province with complete marketing control over any commodity produced in that province. This of course assumes that such producer groups desire this control and can have their scheme approved by their own province.

For example, if the poultry producers of Alberta wish to effectively control the marketing within the province of all or part of the eggs produced within Alberta, a board set up under the authority of its own provincial statutes could do so. By an application under the Agricultural Products Marketing Act, 1949, such Board could obtain an extension of its powers to give it complete control over the marketing outside of the province of all or part of the product produced within the province.

The Agricultural Products Marketing Act, 1949, does not give the local marketing board any greater control over agencies outside the province than is possible through the control of the commodity by the board and whatever contractual arrangements it may make

[8] The long term marketing policy for grains, which is likely to remain under government control boards, is described in another article in this series.

with such agencies outside the province. However, it does give the board authority to take action or police those producing the product within the province and require them to handle the product in a certain manner when marketing outside the province.

Legal opinion suggests that this is about the limit of the authority of the Government of Canada to regulate marketing under the present Canadian constitution, unless it wishes to engage in the purchase and sale of the product.

To date the Governor-in-Council has extended certain specific powers bestowed upon the British Columbia Fruit Board and the Nova Scotia Marketing Board with respect to apples by their respective provincial legislatures. It is likely by the time this is read that the British Columbia Coast Vegetable Marketing Board will also have had approval of an extension of certain of its powers.

The Province of Ontario has a number of control schemes under its marketing Act, but it is doubtful if any extension of powers that would be of assistance is possible here, in most cases, since the boards set up in Ontario do not usually take actual control of the commodity. These Ontario boards simply arrange prices and other marketing practices by negotiation with the trade and make it illegal for the product to be handled otherwise within the province. It is doubtful that an extension of power to control producers shipping outside of the province could be enforced in a satisfactory manner, if a provincial marketing board does not offer to purchase, directly or through agents, the supply of the product which it wishes to control.

While the legislation is new, the general idea as has been noted above is anything but new. By providing this legislation, the Government of Canada has made it possible for producers to organize themselves into large scale selling and market control units, providing sufficient numbers agree voluntarily that this is the best scheme of marketing and that they meet the various other requirements laid down by the provincial legislatures.

Organized marketing boards of this type could make it possible for the Agricultural Prices Support Board, whose functions are described briefly later in this article, to render more effective assistance to agriculture. This would be possible since such Boards would provide a means whereby the Agricultural Prices Support Board may be approached when the need arises and also would be

helpful in handling any price support program where the deficiency payment method is used. A producers' board of this type would reduce to a minimum the amount of auditing and marketing supervision that would be necessary under a system of deficiency payments by the Board to producers. The producers' board would be interested in obtaining the best price possible for the product, even above that guaranteed by the Government, if at all possible, and thus would be working in the interest of the people generally by lowering any costs to the Government for assistance under price support programs.

Price Support Legislation

The objective of minimizing the effect of farm price fluctuations is not a post-war development in Canada. Assistance to agriculture has included many kinds of payments to aid in marketing, to give incentives for increasing or decreasing production, to help pay transportation costs and to provide price premiums for better quality products. Most of these federal schemes of price or income assistance have meant the voting by Parliament of special appropriations, or the enactment of continuing legislation relating to payments and special assistance for a particular commodity.

Canadian farmers are dependent on export trade. Any attempt to maintain their income at a relatively high level requires maintaining exports at 20 to 40 percent of agricultural production. Prices of agricultural products that enter international trade are highly sensitive to changes in foreign demand and monetary and other conditions affecting exchange rates. During the war, overseas contracts played a prominent part in Canadian agricultural price stabilization. A number of the government boards set up during wartime to carry out these contracts along with the necessary export and import controls have been continued in the post-war period under the authority of the Agricultural Products Act, 1947. Overseas contracts for agricultural products in 1949 (with the exception of grains) still handled by Government boards whose authority rests in the Agricultural Products Act, 1947, include those for bacon, cheese and eggs.

Agricultural Prices Support Act, 1944.—The Agricultural Prices Support Act was passed by Parliament in 1944 and represents a general legislative enactment to which producers of any agricultural commodity, except wheat, may turn if need for price assist-

ance can be established. At the present this Act is operative until March 31, 1950.

The administration of the Act is placed in the hands of a three-man Board, the chairman of which is an official of the Canadian Department of Agriculture, while the other two are representatives of Canadian agriculture. The Board has at its disposal a revolving fund of $200,000,000. which is maintained at that amount by annual appropriations, if there is any loss during the year, and, if there is any surplus, it is turned over to the Consolidated Revenue Fund annually. The Board is "to endeavour to ensure adequate and stable returns for agriculture by promoting orderly adjustment from war to peace conditions and to endeavour to secure a fair relationship between the returns from agriculture and those from other occupations."

Unlike price support legislation in the United States, there is no historical price formula set out in the Act. The decisions as to the levels at which prices are to be maintained or the commodities whose prices are to be supported are left to the Board to recommend to the Government. In other words, there is nothing automatic about the Act and its application. However, it provides that the Board may recommend price support for any agricultural commodity, except wheat, which may be designated by the Governor-in-Council, including processed meat, dairy and poultry products.

The usual procedure is for representatives of the interested commodity group to make representations to the Board and after the Board has studied the situation and considered the need it will recommend to the Government that assistance be given or reject the application. It will also recommend, if the application is accepted, the prescribed price and the amount of assistance as well as the method of giving the support which it considers most feasible in the particular case. If the Government approves, then the support program will be put into effect by the Board.

In carrying out this procedure the Board usually takes into consideration:

1. Historical price patterns for the commodity concerned and price levels at which related commodities, if any, are being supported.
2. The basic cause of the price or income decline and the supply of the commodity.
3. The long term market possibilities for the product.
4. The problems of storage and disposal likely to be involved.
5. The relative efficiency of the producers concerned along with possible

alternative sources of income as well as the number of producers affected.

6. The implication of the precedents which are being established.

The Board, as a rule, prefers to have and may request the commodity group itself to suggest solutions to the problem on a long term basis. The ability and willingness of such group to carry out the suggested solutions is regularly appraised by the Board in considering its recommendation.

With this flexibility of operation, it is possible to use a variety of approaches with respect to solving the marketing problems relating to the different products that may require to be supported.

The Board can recommend assistance or support by either of two methods, in accordance with the Act:

1. Outright purchase.
2. Underwriting the market through guarantees or deficiency payments.

The latter method has been used to date only where marketing boards with experience in handling the commodity have been established by the commodity group concerned.

While outright purchase has been the general policy, there have been a number of variations in approaching such purchase, including the following:

(a) An offer to purchase all of the commodity as produced and offered at a price fixed in advance of production.

(b) An offer to purchase up to a limited quantity of the product and thus relieve the market of the surplus until a price adjustment takes place. This may involve the Board undertaking to withhold from the market the purchased portion of the commodity, at least temporarily.

(c) The purchase of all offers of the commodity already produced between specified dates, usually towards the close of the marketing year.

(d) The purchase of an additional quantity of a product for a buyer's account in order that a sufficient total quantity to relieve the surplus situation in the market may be removed, even though the buyer may obtain a bargain through receiving a larger quantity of the product at a discount price.

For the most part, the Board has not offered an overall price support program which would accept the product as produced for market, butter and cheese being the two exceptions. In the case of butter, the Board was continuing a policy which had been established earlier under wartime regulations and was also dealing with

a product which is normally consumed in its entirety in the domestic market. Temporary marketing adjustments, due to a previous short supply situation in butter and the introduction of margarine for the Canadian consumer with the uncertainties created seemed to require some stabilizing factor to protect the producer against extreme price fluctuations. In the case of cheese, a floor price was fixed in advance to December 31, 1949, in lieu of a Government commitment to purchase cheese throughout the 1949 cheese marketing year, in order to fill the contract with the United Kingdom. The cheese contract was filled earlier than anticipated and the Government has fulfilled its commitment by arranging for the Agricultural Prices Support Board to continue to purchase any cheese offered at the contract prices for the balance of 1949.

The Agricultural Prices Support Act, although passed in 1944, did not become operative until 1946. Since that time its operations have included assistance to a number of products under varying circumstances and at different periods of time.

Potatoes—In 1946 and 1948 assistance was given to the potato industry at a cost to the Government of approximately $170,000 in 1946 and $1,600,000 in 1948. In 1946, sales to the British Ministry of Food after the price support program had been established, relieved the market to a sufficient extent to require the Government to accept only a slight loss on the purchase of potatoes for re-sale to processing plants. These potatoes were purchased at $1.50 for a 165-pound barrel (91¢ per 100 lb.) for field run potatoes containing at least 70 percent Canada No. 1 grade for re-sale to starch processing plants at $1.00 per barrel (61¢ per 100 lb.). In 1948 the program was based on the purchase of potatoes in designated areas in the Maritime Provinces at $1.15 per hundred pounds for Canada No. 1 grade potatoes held on farms after April 1, 1949, and no applications for purchase to be accepted after May 31, 1949. Less than three percent of the 1948 production of potatoes in Canada were purchased under this program, and towards the end of the purchase period, prices firmed in the market and the Government was able to re-sell some potatoes to the producers for the same price which they had received. In both years the support program was applicable only in certain parts of the Maritime Provinces, where the removal of some commercial surpluses stabilized the Canadian market generally.

Apples—In 1947, 1948 and 1949, the Agricultural Prices Support Board extended assistance to the apple growers in Nova Scotia and in 1948 and 1949 to the apple growers in British Columbia. For many years prior to the war, Nova Scotia apple growers had been shipping the bulk of their crop to the United Kingdom. This market was lost to them on account of the war and the Government has given some assistance in practically

every year since 1939, although it was not until 1947 that the Agricultural Prices Support Board entered this picture. In 1947 and 1948 the method of support consisted of a system of guaranteed prices, with the payment of any deficiency to the marketing boards in the provinces concerned being made after the apple marketing season was completed. In 1949 the Agricultural Prices Support Board has purchased through the British Food Mission in Canada an additional quantity of apples which it has given to the British Ministry of Food on a dollar for dollar basis up to a total amount of $1,500,000. The apple price support program in 1947 cost approximately $3,000,000 while that of 1948 cost in the neighbourhood of $1,500,000, with most of the direct assistance going to Nova Scotia apple growers in each year. Indirect benefits of the program were received by all apple growers in Canada due to the support given surplus production areas.

Dried White Beans—In order to assist the growers of the 1948 crop of dried white beans, the Government, through the Agricultural Prices Support Board, purchased about 40,000 bushels of beans for refugee relief at a price of $3.75 per bushel delivered to bean warehouses, plus necessary cost for processing, grading, bagging, loading, inland and ocean freight charges, at a cost of approximately $195,000. In establishing this support program, a maximum limit of expenditure of $200,000 was set. The Bean Growers Marketing Board of Ontario was successful in selling the balance of the product in the domestic or export markets.

Extracted Honey—In order to relieve a surplus resulting from a high production per hive in 1948 and the fact that overseas markets had not been regained for Canadian honey in the post-war period, the Board agreed to purchase up to 5,000,000 pounds out of a total production of 45,000,000 pounds of 1948 honey, offers to be accepted from May 15 to July 31, 1949. The Board actually received offers of only about 3,000,000 pounds, which it purchased at a cost of approximately $350,000. Up to September 15, 1949, distribution and sales policy was limited to providing price quotations on request for quantities which could be exported from Canada.

Butter—On April 1, 1949, the Agricultural Prices Support Board offered to purchase butter produced in Canada at prices ranging between 57½ and 59¢ per pound for first grade butter, at various delivery points. By the end of August 1949, the Government had purchased in the neighborhood of 45,000,000 pounds of butter. During August the position had become sufficiently clear for the Board to announce a general price policy up to March 31, 1950. The selling price during the present support period, which ends on March 31, 1950, will not be less than cost plus storage charges. As soon as the Government announced this policy, the trade began to enter the market and make their own purchases and store some butter. However the Board will have most of the available butter to distribute during the short supply winter months.

Dry Skimmed Milk—In May, 1949 the Board announced a purchase program for first grade dry skimmed milk up to a maximum expenditure of $1,000,000, prices to be 9.5¢ per pound for roller process and 10.75¢ per pound for spray process powder, f.o.b. country points. The Government

purchased the maximum amount under this program and still held the skim milk powder at September 15, 1949, although it is expected to transfer it for foreign relief purposes or sell it in export markets, in the near future.

Cheddar Cheese—On August 24, 1949, the Government announced that the Agricultural Prices Support Board would continue to purchase cheddar cheese produced in Ontario and Quebec on and after August 1, 1949, on a similar basis to that on which the purchase of cheese for the British Ministry of Food had been carried on up until that time, at a price ranging from 29¢ to 30¢ per pound for various grades, f.o.b. factory.

Up until March 31, 1949, the operations of the Board had cost the Government of Canada approximately five million dollars including administrative expenses as compared with a total income from the 1946–48 production of all Canadian farm products of approximately six billion dollars.

Throughout its operations, the Board, as far as possible, has anticipated probable needs by studying situations that would appear likely to lead to requests for action. The staff of the Economics Division of the Department of Agriculture, assisted by personnel provided by the Board, has been requested to study production and marketing trends and to keep the price situation under constant review. When actual operations begin, the commodity divisions of the Department of Agriculture are the active agents of the Board in carrying out the purchase programs. To date the Board has not had large scale distribution and merchandising problems to handle, but with the approaching distribution problem for butter, such policies will have to be developed. As a start the Board has acquired the services of a distribution manager who in the first instance will work closely with the commodity divisions of the Department of Agriculture and other Departments of the Government as well as with the trade.

"There is pretty general agreement that the operations of the Board to date have been quite successful. Prices of commodities dealt with have been stabilized and producers have been able to market their products without the serious price declines that threatened. The stability ensured by purchase programs and guarantees has permitted the trade to purchase with confidence and there is evidence that where declining prices had already resulted in delayed purchases, products have moved freely to market once a stabilized price was obtained.

"It is understood that the Board has not encountered any serious

difficulties that may be directly attributed to its method of operation or to the Act itself. It has experienced the kind of problems that are likely to be associated with any stabilization program involving purchases of products. To what grade or class of product should support be offered in order to have the desired effect on the total volume of the product? Will a program applied to a highly specialized surplus producing area have the desired effect on prices elsewhere? Should products from areas where support is in effect be marketed in competition with those of non-support areas, and how? Should an expensive by-product processing program be undertaken in order to preserve products when there is little or no chance of recovering the financial outlay or when it is difficult, if not impossible, even to give the by-product away?"[9]

With respect to the termination of the Act, most people will agree that the idea of stipulating the transition period in the Act was to provide against the maladjustment between the primary producer and other industries which historically has occurred in the first few years following wartime inflation.

"What the Act really visualizes is the possibility of marketing difficulties and the need for adjustment in supplies of different products rather than the complete absence of markets. The Act recognizes, in short, a national obligation to use the resources of the entire country to maintain price stability for agriculture during a period when most of the economic improvement of recent years could be wiped out by causes completely beyond the control of farmers. I think we all recognize now, that even though major nations are bending their energies toward building a stable postwar economy, there is no certainty of immediate success and, therefore, each nation must guard the position of its own people, while making every possible contribution toward developing sound international relationships."[10]

As to the future, contracts in some form or other will likely continue to take a prominent part in any Canadian agricultural price stabilization program, even though they may or may not be carried

[9] These quotations have been taken from an address delivered by Dr. J. F. Booth, Associate Director of Marketing Service, Dominion Department of Agriculture, on June 21, 1949, at the 1949 annual meeting of the Canadian Agricultural Economics Society.

[10] This statement was made by J. G. Taggart, now Deputy Minister of Agriculture and at the time Chairman of the Agricultural Prices Support Board, at the 1946 annual meeting of the International Association of Milk Control Agencies in Montreal.

through by a system of Government boards as they have been during wartime and in the immediate post-war period. Uncertainty in the export field due to exchange problems, along with general recognition that agriculture should receive some assistance to protect it from price and marketing catastrophes, make it appear likely that the Government will extend the Agricultural Prices Support Act beyond its present expiration date.

Conclusion

There exists considerable legislation in Canada on a federal and provincial basis, which gives governmental agencies and farmers the power to take measures for controlling the marketing of farm products. These include provincial marketing and milk control legislation, the Agricultural Products Co-operative Marketing Act and the recently passed Agricultural Products Marketing Act, the latter two being described in this article. This legislation was primarily to provide for orderly marketing techniques rather than price support measures.

Canada has also, through legislation and in other ways, given other marketing aids such as those related to research, education, information, inspection, grading and many other service measures of this type designed to assist in correcting the maladjustments within agriculture and between agriculture and the rest of the economy.

Finally, Canada has passed legislation that combines marketing with provisions for minimum prices for farm products. This includes the Agricultural Prices Support Act, the Canadian Wheat Board Act and the Agricultural Products Act, the first of which has been described in some detail in this article. The overall purpose of this legislation is to reduce price instability and indirectly to have a steadying influence on farm income.

The current agricultural prices support program for all farm products is of an ad hoc nature (full consideration for each product at the time of discussion) contrasted with the use of a parity or some other formula. The price offered by the Board is not necessarily the current market price. The advantage of this procedure is that it allows for a price decision for each commodity on the basis of the current domestic and export position and gives the Board a greater scope in arriving at the immediate support price level. A disadvantage from the farmers' point of view may be that it does not in all

cases provide a forward price which might be helpful in guiding farmers in their production plans.

"Every farmer would like to have 90 percent support and no controls if he thought it could go on forever and there would never be a day of reckoning, but it won't go on and it can't go on because, by the very nature of things, high rigid agricultural prices become in themselves incentives to production. In these days when prices of agricultural products and levels of agricultural supports seem to be of overwhelming interest, we may remember that price is only one of the parts and sometimes one of the least significant parts of a real national program for the long-range welfare of the farmers of this land."[11]

Canada is trying to meet its general agricultural marketing and price problems by means of legislation such as that described in this article, since it would appear that in the long run agriculture in Canada needs assistance in:

1. Shifting production from time to time to conform with export demand so that an adequate volume of exportable products may be maintained.
2. Maintaining production facilities for certain commodities during temporary periods of marketing difficulties.
3. Providing some program of assistance to supplement general government policy during periods of depression.

[11] Press statement of a talk given by United States Senator Anderson to the American Insitute of Co-operation in August, 1949, as published in the American Farm Bureau Federation Official News Letter, September 5, 1949.

EXPERIENCE WITH PROVINCIAL MARKETING SCHEMES IN CANADA

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THE provincial governments of Canada have been experimenting with marketing boards and schemes to an increasing degree since British Columbia first passed "The Produce Marketing Act" in 1927. The general objective has been the supplementing of free market pricing by government sponsored boards of grower representatives under a provincial marketing commissioner. For some products the desire for higher farm incomes from "orderly marketing" within the year has been the motive. For other products, the farm groups have sought higher prices through compulsory bargaining and arbitration between representatives of the numerous farmers, and representatives of the relatively few processors or distributors who were presumed to have monopolistic powers of bargaining, and were allegedly taking abnormal profits. Through boards set up under the laws of the province with powers of compulsory arbitration, farm producers have sought to bring their own members into line, and to bargain collectively with the distributors or processors who were a bottleneck link with the consuming public. At the request of a group of producers who wish to market their products through a marketing scheme, a poll is conducted by the provincial department of agriculture. If the poll shows a majority of at least two-thirds in its favour, the scheme is proclaimed and all producers of the product concerned are thereupon compelled to comply with its terms. The chairman of the schemes has been the marketing commissioner who heads up a board of farmer members representative of the major producing areas. This board bargains with the representatives of the processors or distributors of the product, and in the case of a dispute can refer it to a governmental arbitration board which makes a decision binding to both parties. Minimum prices may be set, and the channels, quantities and qualities of marketings laid down. In many respects this procedure is peculiar to the Canadian provinces.

General History and Background

The first marketing act of the British Columbia legislature followed a four year period of low and erratic prices for tree fruits,

and declining support for the voluntary co-operative which was handling the bulk of tree fruit sales. Under the Act, minimum prices were set and the rates of marketing prescribed. Levies were imposed on the producers to cover the costs of operation of the board. This Act was ruled unconstitutional in 1931 on the ground that it sought to regulate interprovincial trade, a Federal Government responsibility. A companion act, "An Act for the Relief of Dairy Farmers, 1929," was ruled unconstitutional in 1932 because the equalization fees on the producers of milk in the Lower Fraser Valley were held to be indirect taxes, and hence beyond the taxing powers of the provincial governments. When the Federal Government passed the Natural Products Marketing Act in 1934, British Columbia immediately passed a provincial Natural Products Marketing Act in the belief that powers not resident in the Federal Government would *ipso facto* be covered by the provincial legislation. In the years 1934 and 1935, marketing boards were established in most provinces under the federal act. British Columbia and Ontario participated to a greater degree than the other provinces, and since 1935, have proceeded with provincial marketing boards with aims similar to those embodied in the federal legislation. Nova Scotia has put into effect schemes covering apples and wool under an act of 1946. Alberta has an act of regulatory features covering poultry marketing. Saskatchewan possesses similar legislation but it has not been put into effect. This brief survey of the background of the marketing boards indicates their gradual development in the Canadian provinces.

In many respects the agricultural commodity groups participating in marketing boards resemble the organized labour unions in their regional collective bargaining. Whereas labour unions must expand their membership by persuasion, the operation of schemes is commenced by a two-thirds vote of approval by the farmers, most of whom may be largely passive to the objectives of their leaders.[1] The compulsory fees on each unit of product sold by the farmers compare with the compulsory check-off of the unions, while the compulsory arbitration by government represents more than the mediation services provided by the Departments of Labour. The processors under the marketing boards can decide how much of

[1] This is the administrative policy, rather than the legal requirement. *Vide* speech of Mr. G. F. Perkins, Chairman, Farm Products Marketing Board of Ontario, March 14, 1949. No legal requirement is stated in the British Columbia Act.

the product they will buy, just as the employers of labour agree to the wage rates and other conditions, and then hire the number of labourers which they regard as most profitable to their business. The similarities to labour unions are very pronounced.

The Dominion Natural Products Marketing Act

During the fifteen years preceding the Natural Products Marketing Act of 1934, farm prices and incomes had fallen severely in a nation heavily dependent on the exports of primary products. Not only had farm incomes declined from 1920 to 1922, but the recovery in raw materials prices to 1929 had been modest. The depression began in 1929 and from then until 1933 intensified. Farmers looked for some means or other of resisting the fall in their incomes and turned to marketing adjustments, as United States had done under the Federal Farm Board in 1929 to 1931, and as British Columbia had attempted to do in 1927 to 1932. During the 1920's, and especially from 1927 to 1929, Canada had undergone a burst of consolidation in its food products industries. Canadian Canners had absorbed many small canning companies; Canada Packers was formed as a holding company in 1927; Western Canada feared the Nash combination which was dominant in the sale of fresh fruits and vegetables in the four western provinces. In part these consolidations represented larger firms absorbing the smaller ones which had excess capacity, but farmers were suspicious of the reduced number of buyers for their products. British Columbia had already experimented with marketing controls which established bilateral bargaining of the farmers' selling monopoly and the processors' or distributors' group. The Royal Commission on Mass Buying and Price Spreads in its hearings in 1934 had publicized certain aspects of large-scale buying which convinced farmers that the incidence of the depression was falling with undue severity on the prices of their raw products. For reasons such as these, Canadian agriculture supported the passage of the Natural Products Marketing Act by the government of Canada in 1934. This legislation applied to interprovincial and export trade. On the whole the farm groups which took advantage of the Act were already organized, the least depressed, and in small contiguous areas. British Columbia raw material producers took greatest advantage of the Act. The following schemes serve as illustrations: British Columbia Tree Fruit, British Columbia Red Cedar Shingle, British Columbia Dry Salt

Herring and Dry Salt Salmon, Milk Marketing of the Lower Mainland of British Columbia, British Columbia (Interior) Vegetable Marketing, British Columbia Coast Vegetable Marketing, British Columbia Halibut Marketing, British Columbia Hothouse Tomato and Cucumber Marketing, British Columbia Small Fruits and Rhubarb Marketing and the British Columbia Sheep Breeders' Marketing Scheme.[2] Ontario producer groups covered by the Natural Products Marketing Act included Ontario Flue-Cured Tobacco, Western Ontario Beans, Ontario Cheese Patrons and Ontario Burley Tobacco. Certain schemes cut across provinces such as the Fruit Export Marketing, Eastern Canada Potato Marketing, Canada Jam Marketing, Processed Berry Marketing, Dairy Products Marketing Equalization, and the Butter Export Stabilization schemes. The only purely Maritime Scheme was the Grand Manan Smoked Herring Products of New Brunswick. The export schemes (dairy products and butter) attained very little experience.

The boards administering the schemes were allowed to advise on tariff policy. They had powers to regulate marketing, to establish pools, and to levy license and equalization fees on processors and farm producers. It will be observed that the schemes were heavily weighted by British Columbia products which were produced in clearly defined, semi-isolated agricultural districts, where bottlenecks existed in processing or packing establishments, or in transportation outlets. The Ontario and Grand Manan schemes also applied to clearly defined areas in the case of beans, burley tobacco, flue-cured tobacco, and smoked herrings.

As an illustration of the setting of the time of marketing, the British Columbia Tree Fruit Scheme authorized the monthly release of apples. The places of marketing were prescribed in the Ontario Cheese Patrons Marketing Scheme. All cheese was to be sold at auction on local cheese boards in order to ensure a greater degree of competition between the buyers of the product. The quantity of product marketed was prescribed under the British Columbia Salt Fish and Red Shingles Marketing Schemes. Minimum grades were set under the British Columbia Tree Fruits and Eastern Canada Potato Marketing Schemes. The method of distribution was determined in part by the Eastern Canada Potato

[2] *Vide* F. M. Clement, *et al.*, "The Regulation and Control of Marketing," pp. 217–231, *The Economic Organization of Canadian Agriculture.*

Marketing Scheme where sales on consignment by dealers were forbidden. Tolls on sales were generally collected when the product was received by the distributors or processors. Regional representative boards operated within the limits prescribed by the Dominion Marketing Board.

The legality of the Natural Products Marketing Act under the British North America Act of 1867[3] was referred to the Supreme Court of Canada in November, 1935. After that date no further boards or schemes were established, and in effect the Act came to an end. In June 1936 the Supreme Court of Canada ruled that the Act was unconstitutional (*ultra vires* of the Federal Government). In January 1937 the Legal Committee of the Privy Council in the United Kingdom, the highest legal authority on constitutional matters, upheld the Supreme Court of Canada's decision, and as a result the boards established under the Natural Products Marketing Act were disbanded.

The Provincial Boards and Schemes

British Columbia's Natural Products Marketing Act of 1934 continued in force, and in a reference to the Supreme Court of Canada in November 1938 was held to be within the powers of the provincial government. Certain schemes have been continued in British Columbia under this act, notably the British Columbia Tree Fruit Marketing Scheme, the British Columbia Coast Vegetable Scheme, and the British Columbia Interior Vegetable Scheme. In Ontario the Farm Products Control Act was passed in March 1937 to allow marketing schemes to continue under provincial authority in that province. Almost immediately the Ontario Cheese Producers' Marketing Scheme was put into effect. Shortly afterwards the asparagus, pear, plum, cherry, and peach growers came under schemes for that part of their crops which went into processing. Significantly the Ontario Flue-Cured Tobacco Growers and the Ontario Burley Tobacco Growers did not set up schemes under the new provincial legislation. Instead they incorporated themselves under the Ontario Companies Act, and have handled their own price negotiations, acreage allocations, and marketings of tobacco ever since.

[3] The British North America Act of 1867 incorporated Canada as a federal union. The powers of the provinces were listed, with remaining powers to the federal government. Judicial decisions have further defined the powers, and established precedents.

The Ontario products now covered by marketing schemes include the following annual crops: tomatoes, peas, green and wax beans, sweet corn, beets, carrots and cabbage for processing, dry field beans, seed corn, soya beans, new potatoes and sugar beets. Raspberries and strawberries for processing are representative of short run crops. Asparagus, peaches, pears, cherries, plums and grapes for processing represent perennial crops. The other products covered are cheese, hogs and cream. The dates of introduction of the schemes indicate that since 1944 the boards have expanded considerably. The schemes in force in mid-1949 are:

The Ontario Cheese Producers' Marketing Scheme, 1938
The Ontario Asparagus Growers' Marketing Scheme, 1938
The Ontario Pear, Plum, and Cherry Growers' Marketing Scheme, 1938
The Ontario Peach Growers' Marketing Scheme, 1938
The Ontario Sugar Beet Growers' Marketing Scheme, 1942
The Ontario Seed Corn Growers' Marketing Scheme, 1944
The Ontario Berry Growers' Marketing Scheme, 1944
The Ontario Bean Growers' Marketing Scheme, 1944
The Ontario Vegetable Growers' Marketing Scheme, 1946
The Ontario Hog Producers' Marketing Scheme, 1946
The Ontario Cream Producers' Marketing Scheme, 1947
The Ontario Grape Growers' Marketing Scheme, 1947
The South-Western Ontario New-Potato-Growers' Marketing Scheme, 1948
The Ontario Soya Bean Growers' Marketing Scheme, 1949

As previously indicated, provincial marketing acts have been passed in Alberta, Saskatchewan, Nova Scotia and New Brunswick. Alberta has instituted a poultry marketing board, but its powers have been purely regulatory with a view to improving the quality of poultry and eggs. New Brunswick's Act has not extended beyond the continuation of the Grand Manan Smoked Herring Products scheme. The degree of use of marketing legislation varies considerably within Canada.

General Powers of the Boards

Under the marketing boards, as presently constituted, the usual procedure is to set up provincial boards and to establish districts with representatives from each district on the provincial board. The provincial boards can establish local boards which serve in an advisory role. The boards have power to investigate, arbitrate, adjudicate upon, adjust or otherwise settle any dispute between pro-

ducers, processors, distributors or transporters of farm products, or between any two such classes of persons. They may investigate the cost of producing, processing, distributing and transporting any farm product, prices, price-spreads, trade practices, methods of financing, management, grading, policies and other matters relating to the marketing of farm products. They may do such acts and make such orders and directions as are necessary to enforce the observance and carrying out of the provisions of the Act, the regulations, and any scheme. They may establish price negotiating agencies for any scheme and adopt or determine fair or minimum prices for any regulated product, or any grade of a registered product. They may exempt from any scheme or any order or direction of the Board, any person or class of persons engaged in the producing or marketing of any regulated product or any class, variety or grade of regulated product. They may require persons engaged in the producing or marketing of a regulated product to register their names, addresses and occupations with the Board; require such persons to furnish such information in regard to the regulated product as the Board may determine, and inspect the books and premises of such persons. They may require the furnishing of security or proof of financial responsibility by any person engaged in marketing a regulated product. They may refuse to grant any license for any reason which the Board may deem sufficient. Persons may be prohibited from engaging in the marketing or processing of any farm product except under the authority of a license issued by the Board. The Board may suspend, revoke or refuse to renew any license for failure to observe, perform, or carry out any of the provisions of the Act, and the regulations of any scheme, or any order or direction of the Board. In every case the applicant shall be afforded an opportunity of appearing before the Board to show cause why such license should not be suspended or revoked or why such renewal should not be refused. The Board may, by such means as it may deem proper, stimulate, increase or improve the marketing of farm products. The commodity boards may require the licensing of persons engaged in marketing or processing, and may prescribe the license and equalization fees. They have the power to collect, use and return service charges or equalization fees on farm products. Under the British Columbia Act, loans may be granted to assist the construction of storage facilities. A feature of the British Columbia boards is their emphasis upon having all sales go across one desk to the distribu-

tors, together with a pooling of sales throughout the season. These powers are substantially similar in all provincial acts, but the extent of use varies greatly between provinces.

In practice the license fees on processors or distributors have been purely nominal. The administrators have been guided by the experience of the Act for the Relief of Dairy Farmers (British Columbia) where the license fees were held to constitute indirect taxation and to be *ultra vires* of provincial authority. Moreover, the Agricultural Adjustments Act of the United States had been thrown out in 1936 on the issue of processing taxes. By negligible processors' fees, the provincial Marketing Acts in Canada are not liable to such a judicial reverse. The fees collected under provincial acts have come from farm producers, although they are deducted by the processors. The following fees collected in Ontario in 1948 or in the 1949 schemes authorized to date may serve as illustrations:

cheese—5 cents per hundredweight of cheese
hogs—2 cents a carcass
peaches for processing—40 cents a ton
cream—1/10 of a cent per pound of butterfat
sugar beets—3 cents per ton delivered to processor
South-Western Ontario new potatoes—1 cent per 75 pound bag
berries for processing—1/10 of a cent per quart
beans—2 cents per bushel license fee
38 cents per bushel equalization fee
asparagus for processing—½ cent per pound
seed corn—2 cents per bushel
soya beans—½ cent per bushel.

General Appraisal of the Schemes: Their Value and Significance

Since the marketing boards and schemes are in force in several of the Canadian provinces, and are supported to some extent by the three major political parties of Canada, it is appropriate to examine their objectives and their administration. Already Ontario and British Columbia have had over a decade of experience. Ontario will be used as the main illustration.

1. Many schemes were launched out of the conviction that price gains could be secured if some intermediate bargaining agency could be set up between the numerous farm producers and the few buyers or processors. Especially if there was one dominant buyer, the small sellers and their local agents could, through organization, avoid taking a low price or a narrow margin for their produce.

For the monopoly buyer, there is undoubtedly an upper limit to the price that he will pay, and a lower price at which farm producers may be induced to sell. The margin which is the monopoly gain to the buyer is something that the sellers may be able to extract under pressure. The sellers may also feel that their centralized board can carry price determination out from the consuming or processing centres to the production areas. Perhaps some gains in price have been attained for producers by their consolidation under a marketing board. They might equally well be attained through a selling co-operative. Certainly our city labourers have felt impelled to form their trade unions for similar reasons so that the buyer of labour service might be faced by one selling agency rather than hundreds or thousands of freely competing labourers. On the other hand it may be impossible for a central selling agency to attain any gains through such bargaining. If there are a few large buyers of farm produce, each one anxious to maintain his share of the market, and each determined not to let the others get a price advantage (and a profit opportunity) by buying cheaply in one or more local markets, then the market prices will approximate the competitive level. Surely this situation is fairly typical, and since it is general, the gains from bilateral bargaining are probably very slight in many cases, and the cost of operating the boards may be a clear deduction from the income that farmers would receive, especially during sellers' markets and rising prices, as in the period since 1941.[4]

2. Frequently the argument is raised that the marketing schemes are the essence of democracy as the individual farmers can vote a scheme into effect, or can vote its termination. In fact most Ontario schemes have been inaugurated by wide majorities. It should be remembered, however, that a majority of a commodity group is almost inevitably a minority of all farmers and inevitably a minority of the total population. There is no guarantee that producers are acting in the public interest, or in the consumer interest through the price policy of the schemes. The most that can be said is that democracy exists within the group itself. Moreover, the marketing acts do not contain specific provisions for the re-polling of producers to ascertain if the schemes have a continuous broad base of support. This would seem to be a large oversight.

[4] *Vide* W. Baum, *Pricing in the Tobacco Auction*, Proceedings of the Annual Meeting of the New England Research Council on Marketing and Food Supply, April 14–15, 1949.

3. To some extent the operation of marketing schemes in Ontario has encouraged cost studies of labour, equipment and material inputs into crop production. Certainly cost and farm management studies were conducted previously, notably in fluid milk production, but to assist in price negotiations producer groups have asked for and received assistance in cost studies of canning corn, peas and tomatoes. To some extent the changes in costs are considered when bargaining for contract prices, while the farmer's cost position has encouraged him to examine his production practices. This has contributed to improvements in farm management, and as such is highly welcome.

4. A third aspect of the marketing schemes has been the extent to which the contract prices have served as forward prices. For certain of the schemes, notably cheese, cream and hogs, no effort has been made to implement forward prices. For annual crops such as sweet corn, peas, beans, and tomatoes, the floor prices are generally determined between January and the middle of March, in time to influence plantings. In 1949, however, disputes over prices and related conditions led to deadlocks between producers and processors, and the price which came out of the arbitration proceedings left little time for adjusting farm plans. The floor prices for the season have provided a measure of price assurance to farmers, and the opportunity to balance the income alternatives of one crop against another. For tree fruits such as cherries, plums and peaches, the price negotiations await knowledge of crop conditions. For Ontario new potatoes, and British Columbia fresh vegetables, returns are calculated on the basis of the receipts from pooled sales. In such cases, the prices represent bargaining alone, with no opportunity to alter annual production. On the criterion of forward pricing, the marketing boards have had a somewhat irregular record.

5. The required conditions for the institution of a marketing scheme in Ontario suggest limitations to their application and usefulness. In the Report of the Minister of Agriculture (Ontario) for 1944 three considerations were mentioned in the establishment of a scheme. First, each proposed scheme had to set out a practical marketing problem. Second, the marketing of the crop had to be subject to effective regulation under the limitations of provincial jurisdiction. Third, if the first two conditions were met, a ballot of the growers was to be conducted to determine whether the majority were in favour of the scheme. In practice these conditions have meant that the schemes have generally begun with well de-

fined areas of production, with products sold primarily on the domestic market, with few processors or buyers, and with considerable ease of administration. These conditions are met by the British Columbia and all existing Ontario schemes, except those concerned with cheese, hogs and cream. The cheese and hog schemes deal with produce a large part of which is exported. The cream scheme involves many scattered producers, but with consumption entirely in Canada. The ease of administration, the requirements of contiguous producers, and few bottlenecks easily subject to control, suggest that producers in regions of scattered production feel they cannot acquire significant price and bargaining advantages through the existing marketing schemes. As illustration of this point certain marketing schemes have been abandoned. The Holland Marsh Growers' Marketing Board was abandoned after one season, 1937. Growers lost confidence in one centralized agency for the sale of lettuce. They were of diverse national origins, and slow to co-operate among themselves. Their major market was in nearby Toronto while their product had its peak demand at the time of its greatest perishability. For similar reasons a proposed South Essex Growers' Scheme considered in 1937 was not put into effect. The Erie-St. Clair Onion Growers' Marketing Board was withdrawn after the one season's experience in 1939, when farmers indicated their preference for the former marketing channels.

6. At this point it might be appropriate to discuss loopholes in the marketing schemes, and their bearing on the longer-run success of this form of price bargaining. With rare exceptions the schemes prescribe only the floor prices that must be paid for the product. The quantity to be purchased by the processor is not laid down, with the exception of canning tomatoes in the 1949 Ontario crop. If equilibrium price is defined as that which equalizes the quantity purchased by the buyers and the quantity that suppliers are willing to produce, then a low negotiated price becomes ineffective since buyers will bid up the price above this level. This often happened in the canning crop contracts during the war and early postwar years. On the other hand if the negotiated price is above the equilibrium price for the quantity produced, processors or buyers will limit their purchases to the quantities that they can handle with greatest profit. If the product is semi-perishable the balance must be disposed of on the fresh market for what it will bring. In the case of peaches, the fresh market has been considered the higher priced market. If peaches are not absorbed by the processors they

must be pushed on the fresh market or go to waste. In the case of asparagus the fresh market is considered the premium one, and asparagus is diverted to the processed market largely to ease the pressure on the price of fresh asparagus. For several years, the license fee collected from growers was used to subsidize the export of canned asparagus. While it is probable that mistaken price policies of those in charge of the schemes have forced some wastage of the fresh product, physical wastage may also occur from production in excess of the capacity of the processing plants. It is not always immediately clear how much wastage price policies have caused. Physical wastage of products covered by marketing schemes needs to be examined from both short-run and longer-run effects on producers' incomes and on inter-product competition. Higher producer incomes in the short-run may be obtained by some deliberate physical waste. Over the longer period other producers will expand their output to take advantage of this higher price. Meanwhile consumers will shift their purchases to other items which have not increased in price. Such producer gains, therefore, soon become dissipated.

7. If the negotiated prices have been raised above the competitive equilibrium level, the growers will find comparative advantages of crops with high fixed prices higher than other crops with lower fixed prices or completely free prices. Production of the high priced crop will increase, and the purchases by dealers will leave some of the crop unsold. In periods of sellers' markets the processors will try to pass on their higher costs of materials to consumers through higher retail prices. In periods of declining prices and buyers' markets, high fixed prices will reflect back to farmers in reduced purchases by the processors. Meanwhile consumers will shift their purchases to those items the prices of which have not risen or have fallen the most. For products which touch a high-income market or possess an inelastic demand, growers and processors have a short-run price-raising advantage which they may exploit. This has probably been the situation in the case of canned asparagus where surplus packs, which would depress Canadian prices, have been exported to the larger United States market. For products with greater price elasticities of demand, price increases quickly reflect to processors in lighter sales and to growers in lighter purchases by processors or dealers.

8. The schemes lack formal controls over each province's production. Price policy may encourage expanded production through

more acres, higher yields per acre or animal, or new producers not covered by the schemes. The situation report of the Dominion Department of Agriculture for 1948 indicated that more of the Canadian pack of canned vegetables is being grown in provinces not covered by marketing schemes. Quebec, the Maritime Provinces, Manitoba and Alberta had a larger portion of the pack of green and wax beans, canning corn, canning peas and tomatoes in 1948 than in 1943 to 1945. The increase in beans and tomatoes was particularly notable in Quebec, while Alberta showed more beans and canning corn. Ontario and British Columbia, which operated under marketing boards, were not retaining their proportion of the total Canadian pack of canning vegetables although this has been clouded by the general expansion in the canning of vegetables.

9. From the standpoint of the general public, another significant loophole has been the absence of interprovincial agreements between marketing boards concerning the prices of farm products. Where a product sold on a nationwide basis originates chiefly in one province the existing price is affected by the production of other areas. As an illustration of price-leadership arising from the price negotiation of a marketing board, the British Columbia Interior Vegetable Marketing Board is reported to have deferred the announcement of its prices for canning vegetables in 1949 until after the Ontario prices had been announced.[5] This could permit British Columbia prices to be set to allow for interprovincial competition by its canned produce.

The interprovincial undercutting of prices may be eliminated or at least reduced in future by the collaboration of the major producing areas through interprovincial agreements under the federal Agricultural Products Marketing Act of 1949. On the other side of the picture the difficulties in the way of achieving this objective are likely to increase, especially in canned fruits. The rapid increase of British Columbia's pack of pears, plums, peaches, cherries and raspberries since 1935–39 means that products priced under the Natural Products Marketing Act (British Columbia) will soon compete severely with products priced under the Farm Products Marketing Act of Ontario (1946). The poultry groups have already given some consideration to having the marketing of poultry products brought under a national marketing agreement of some kind under the new federal legislation. To the extent that the major

[5] Current Review of Agricultural Conditions in Canada, April, 1949, p. 14.

producing areas of the several provinces are able to effect joint arrangements price competition will be reduced.

10. All of the marketing acts mention as one of their objectives the improvement of marketing methods. This improvement is presumably additional to that already provided for by government agencies and the trading groups themselves. If improvements are introduced which influence quality, transportation or selling methods, they must arise from the study and appraisal of marketing alternatives. This implies that research in commodity marketing will be more lavishly endowed and more incisively analysed by the groups participating in schemes. Since the boards are staffed by grower representatives, this type of research into improved methods is likely to be conducted by part-time investigators following up hunches and the simpler forms of induction. The question may well be raised of the value of this research by self-interested commodity groups, in comparison with the results that might be secured by the established research agencies of government which would be free of commodity bias and special pleading. If, however, the boards make use of these existing research bodies, some very valuable results may be obtained.

11. Some of the Ontario annual contracts such as those for sugar beets and seed corn confine their content to the prices of clearly defined grades, terms of payment, and by-product allowances or adjustments. This may be compared to the short statement of principles contained in the collective bargaining agreements of well established labour unions and their employers. In other contracts such as the 1949 Ontario tomatoes for processing contract, the conditions of sale, grading, deliveries, payments, etc., are outlined in great detail. When such details must be arrived at by arbitration rather than peaceful negotiation there is clear indication that the working relationships of growers and processors are not characterized by mutual confidence and satisfaction. When the parties to the contract operate under such detailed regulations as exist in the tomato agreement, other differences almost inevitably will assert themselves and may be encouraged by resentment and hostility to the arbitration procedure. In other words, if goodwill does not already exist between growers and processors, it is much less likely to exist if detailed conditions are inserted in marketing contracts.

These considerations raise the question as to whether marketing boards have, generally, contributed to better producer-processor understanding. If each party to the negotiation must respect the

strength of the other, then their joint interest in productive efficiency, quality maintenance, and volume of sales may contribute to cost-reductions, pooling of knowledge, and the ascendancy of mutual interests over mutual conflicts. The financial success or difficulties of the processors is not a matter of indifference to the long-run interest of growers, while it is to the interest of processors to have their patrons near to their plants. In many cases the schemes, by enforcing collective as contrasted with individual bargaining, have contributed to goodwill which may ensure the continued existence of voluntary bargaining associations of producers should the schemes themselves be withdrawn.

12. Some commodity groups have, without doubt, asked themselves whether any significant results have been attained from the operation of marketing schemes. All Ontario schemes have the power to assess levies against farmers. Usually the levies are not large, and it is frequently pleaded that they are justified because of their modest size.[6] Quite independently of the size of the levy it may be asked whether the course of development of the Ontario hog scheme (in effect since 1946), and the Ontario cream scheme of 1947 are likely to bring results which would justify their existence, and their financial support. In other words might not as significant marketing improvements have come from governmental agencies? To plead that the industry is complicated by export and interprovincial trade, by joint or by-product production on farms, and by competing demands of processors and consumers (e.g. milk, poultry and meat products), is to admit that the schemes are attempting to accomplish results that they should never have undertaken. The farmer may well ask whether well-considered economic research and food products regulation might not have given him just as good, if not better, results for each dollar taken from his gross income in taxes and levies.

13. The concensus of farm opinion seems presently to be in favour of marketing legislation.[7] All provinces except Manitoba, Quebec and Prince Edward Island possess marketing legislation, while the Federal government has passed an enabling act allow-

[6] The equalization fee of 38 cents a bushel on Ontario (field) beans, however, seems unduly large even to cover the price risk of the export market.

[7] An exception which may reflect changing farmer opinion is the rejection of a proposed poultry products board of the Lower Mainland of British Columbia in a vote of July, 1949. In this case the bulk of sales was handled by a producer co-operative whose policy presumably was considered sufficiently attractive by farmers of the lower Fraser Valley.

ing interprovincial schemes.[8] As has been mentioned, the provincial marketing boards are likely to find increased competition within Canada, particularly in canned fruits. An important question is whether marketing boards as presently constituted could provide for the reconsideration of contract prices, quantities and grade differentials if business conditions were to change suddenly and unexpectedly. The operation of the pools in British Columbia suggests that their act might be administered to deal with an emergency decline in consumers' purchasing power. Ontario's Act gives no indication of this flexibility and some commodity representatives insist that the success or failure of the processors is their own risk. Recognition of a greater common bond of interest is needed as well as provision for price-flexibility in case of emergency.

14. The question may be raised as to whether the stated objective of expanding domestic consumption and exports might not be brought about just as well by a programme of quality improvement with premiums and discounts for grades administered by the Departments of Agriculture as by any program that might be undertaken by marketing boards. Another important consideration is whether farmer co-operatives have been strengthened or weakened by price-bargaining under marketing schemes. Co-operative experience has shown that a fairly strict adherence to the Rochdale principles, and the confidence and criticisms arising from the individual members are essential to the long-run success of co-operatives.[9] Unless co-operatives are constantly alert to member relationships and business developments, their support weakens. This is particularly a danger when difficulties in price and contract negotiations can be thrust on the governmental arbitrator. After all, governmental support cannot be presumed permanent. Co-operatives may have the strength to carry on without governmental price arbitration, as the Ontario tobacco groups have done since 1937, but they must be kept constantly alert. The question may be raised of how many farmer producer groups have the strength to stand on their own, and bargain with the processors and distributors if the government's support given to marketing boards was suddenly withdrawn. That would be the test of the strength of farmers' co-operative bargaining.

[8] *Vide* article by A. H. Turner in this series. The agriculture of the new province of Newfoundland has been omitted as negligible.

[9] This paper has assumed that "compulsory co-operation" is a misnomer in comparison with voluntary co-operation.

With the prospect of lower incomes for Canadian agriculture, policy decisions on marketing boards and schemes cannot be long delayed. One decision might be to reduce the scope of schemes to quality regulation which has been a traditional role of governments, with provision for price arbitration in case of serious breakdowns of negotiations between producer groups and produce buyers. The Alberta, Saskatchewan, New Brunswick and Nova Scotia Acts aim at approximately that objective, as does the revised Milk Control Act of Ontario (1948). Another decision might favor compulsory prorating of acreages or of marketings such as exists in the California Pro-Rate Act or the British Columbia Fruit Board. Both of these areas are geographically clearly defined, and therefore possess ease of administration. Still another policy might provide for governmental subsidies to support negotiated prices and volume of production or sales in case world prices should decline, as has been done in the United Kingdom since the war. Its feasibility would depend on the financial strength of the government, the degree of self-sufficiency of the nation in respect to food, and the magnitude of price declines. It might not be feasible in the Canadian provinces where food price declines would probably be a part of the general decline in all prices.

In conclusion, the experiences of the Canadian provinces with marketing boards have brought social innovations into marketing in the belief that marketing boards with farmer representatives, supported by the compulsory arbitration of governments, could attain increases in farm income through collective bargaining with distributors and processors. The gains in marketing efficiency have not been great, even in "orderly" marketings which have been the goal of British Columbia's boards, for it is not self-evident that governmentally supported boards are doing better than might be expected from voluntary co-operatives with good business leadership and storage facilities. Weaknesses and dangers exist in farmer attitudes toward the boards as a form of income security. Certain of the features, notably the pooling of knowledge of production and trade practices, and forward pricing have contributed to better understanding and improvements in quality, but these have been by-products of hard-headed bargainings over price. The provincial boards, especially in Ontario and British Columbia, must give greater consideration to the long-run consequences of their policies if they are to serve wisely the farmers and the general public.

DEVELOPMENT OF WHEAT MARKETING POLICY IN CANADA

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PRODUCTION and marketing of wheat have been among the most important economic activities in the Dominion of Canada for the past half century. The Canadian wheat economy was created largely after 1900 in the Prairie Provinces, in the northern extension of the continental hard spring-wheat region. The settlement of this area provided tremendous population expansion and investment opportunities throughout the entire Dominion. Within a generation after 1900 the Canadian population doubled, reaching a total of 10.4 million people by 1931. Over the same period the population of the Prairie Provinces increased five-fold to a total of 2.4 million people. In 1900 less than one-twelfth of the Canadian population lived in the Prairie Provinces; by 1931 approximately one-quarter lived there.

Prairie lands "ready for the plough" were brought under cultivation by millions of acres. Ten million acres were in wheat by 1911, twenty-two million by 1921 and twenty-five million by 1931. Wheat crops which in the early years of the century were measurable in tens of millions of bushels increased to hundreds of millions of bushels. The average Canadian wheat crop (approximately 95 percent of which is grown in the Prairie Provinces) for the ten year period, 1929–38, was 309 million bushels. The average crop for the six war years, 1939 to 1945, was 439 million bushels. Four times Canada has harvested over half a billion bushels of wheat in a single year—in 1928, 1939, 1940 and 1942.

From a position of minor importance among Canadian exports in 1900, wheat and wheat flour advanced to first place by 1920. In the late 1920's wheat and flour yielded one-third of the dollar value of Canadian exports. Over the ten years 1929 to 1938 annual wheat exports averaged 200 million bushels. Throughout the second World War the average was 259 million bushels. Though Canadian farmers produce less than 10 percent of the world wheat supply, their exports—approximately two-thirds of their production—accounted for from 35 to 40 percent of the world trade in wheat in the late inter-war years.

These facts suggest the importance of wheat to the Canadian

economy. They suggest also that Canadian wheat marketing policy has always been essentially wheat export policy and, as such, has been the responsibility of the Dominion Government. It is important for the present analysis, therefore, to review the position of the Government in regard to the marketing of Canadian wheat.

Until very recent years Canadian governments at the federal level have held to the view that wheat should be marketed by the private trade and under the "open market" system, with government intervention limited to licensing and supervision. This view was maintained in spite of persistent advocacy of grain growers that it be abandoned in favor of state trading, and in spite of exigencies to be noted later which forced its temporary modification. Though it involves pre-judgment of the future to say so, it is argued in the present analysis that the action of the Dominion Government in creating a national monopoly of wheat marketing under the Canadian Wheat Board in 1943 marks a fundamental change in government attitude toward wheat marketing policy rather than merely another temporary modification dictated by abnormal expediency.

Under the open market system Canadian wheat was handled by specialized agencies, by elevator companies—whether "private" or co-operative—by commission agents, merchants and exporters. The central institution within this system, both functionally and symbolically, was the Winnipeg Grain Exchange. Until 1943 the futures market in the Winnipeg Grain Exchange was one of the great futures markets of the world. To the supporters of the open market system it stood as the symbol of all the virtues of free enterprise. To the grower it epitomized the hazards to which a freely moving price system may condemn a group of highly competitive producers in the marketing of their product.

The Dominion Government was first driven into active intervention in the Canadian wheat trade by the extremities of Allied food supply during the first World War. Faced by the gravest possible food crisis in 1916 the Allies established centralized buying of wheat in North American markets. By the early spring months of 1917 the Grain Export Company—the North American purchasing agency for the Allies—had secured a corner on Winnipeg May wheat. The fact that this corner developed in the course of *bona fide* efforts by the Allies to assure themselves of adequate supplies of wheat rather than for speculative purposes in no way modified

the trading panic which arose in the Winnipeg and Chicago markets when the shorts discovered their position and began to "run for cover." Futures trading was necessarily suspended temporarily and short positions were settled by agreement. In June, 1917, the Dominion Government established the Board of Grain Supervisors by Order in Council and endowed it with full power to fix the price of Canadian wheat and to determine its movement from the local elevator to the Allied purchasing agency. The urgency of the circumstances which called the Board into existence outlasted the war and the Board set the price for, and directed the movement of the crops of 1917 and 1918 as well as the balance of the 1916 crop. Prices set by the Board were $2.40, basis No. 1 Northern Fort William,[1] for the balance of the 1916 crop, $2.21 for the 1917 crop and $2.24½ for the 1918 crop. Futures trading on the Winnipeg market was suspended on September 1, 1917, and remained suspended throughout the period of the Board's activities.

Persisting in the view that only the utmost abnormality in trading conditions could justify state intervention in the movement and pricing of Canadian wheat, the Dominion Government allowed the activities of the Board of Grain Supervisors to come to an end in 1919, with the intention, apparently, of permitting the private grain trade to function as it had before the war. Futures trading was re-established in Winnipeg for a few days in the latter part of July, 1919. It was quickly demonstrated, however, that conditions were far from normal by any pre-war test. Following consultation with representatives of the Canadian Council of Agriculture the Government established the first Canadian Wheat Board to handle the entire 1919 crop on a state monopoly basis.

The Wheat Board of 1919–1920 was modelled on Australian experience and differed in important respects from its Canadian predecessor, the Board of Grain Supervisors. Whereas the latter had established fixed prices and had directed the movement of Canadian wheat, the Wheat Board took title to all wheat marketed in Canada, paid the grower a fixed initial payment and issued participation certificates for whatever additional sums might be realized from the sale of the wheat. The wheat was then sold by the

[1] All wheat prices quoted in this article are on the basis of No. 1 Northern in store at Fort William-Port Arthur unless otherwise indicated. The Fort William-Port Arthur price includes certain fixed charges of approximately 20 cents a bushel for freight, elevator handling charges, inspection and grading fees, commissions, etc.

Board throughout the year at prices which were negotiated specifically for specific consignments. The total proceeds from sales less the initial payment were finally paid on a pro rata basis to the holders of participation certificates. The 1919 crop was marketed, in effect, on the basis of a state-operated compulsory pool. The initial payment was set at $2.15 per bushel and additional payments brought the total proceeds to $2.63 per bushel. In July, 1920, the Government, expressing its belief that the unusual circumstances which had justified the establishment of the Board no longer existed, stated that the Wheat Board would not function for the 1920 crop and that wheat marketing would revert to the "normal" methods of pre-war years.

Three years of complete control of Canadian wheat marketing by the Dominion Government had done nothing to alter the official viewpoint that grain should normally be marketed by means of the open market system. With the growers, however, it was a different matter. The possibility and comparative efficacy of a new system of marketing had, as far as they were concerned, been amply demonstrated. In the months which followed the restoration of open market trading in 1920 the price of wheat fell drastically. It was easy to argue that the Board, had it been continued, might have prevented or at least significantly tempered the decline. The growers accordingly were determined not to remain longer at the mercy of the open market system. From 1920 to 1923 they fought persistently to have the Wheat Board re-established. They abandoned the fight eventually only when repeated governmental rebuffs had finally convinced them that the fight was hopeless and when at the same time they came to believe that an alternative solution lay within their own power to put into effect. This alternative was that wheat might be marketed by cooperatively organized producers' pools without reliance on the futures market.

The wheat pool period is of considerable importance in the history of Canadian wheat marketing. Within the limits of the present analysis, however, this period can only be briefly commented on to indicate its significance for the development of Canadian wheat marketing policy. The provincial pools and the Central Selling Agency which were established in 1923 and 1924 were modelled on the non-stock, non-profit, voluntary contract type of commodity pools which had become prevalent in California in the war and early post-war years. The inspirational oratory of a colorful Cali-

fornia attorney, Aaron Sapiro, brought to western Canadian farmers the vision of a new economic gospel. The expansion and early successes of the Canadian wheat pools were little short of spectacular. Over the years from 1924 to 1931 the pools handled approximately one-half of the wheat marketed in western Canada.

In terms of wheat marketing policy the wheat pool period is of significance for two reasons in particular. In the first place, a good deal of evidence accumulated during the late nineteen-twenties to indicate that many wheat producers regarded the voluntary pools as but an imperfect substitute for a single compulsory pool sanctioned by legislation or, better still, operated by the Government as in 1919–1920. In the second place, the financial difficulties in which the pools became involved due to the collapse of prices after 1929 forced the Dominion government for a second time into a measure of market intervention far beyond anything regarded as normal in the field of Canadian grain marketing policy.

The financial difficulties of the wheat pools arose out of their system of financing in conjunction with a drastic decline in prices. For the 1929 crop the pools made an initial payment of $1.00 per bushel, the funds being advanced by the banks on the security of warehouse receipts. In January, 1930, No. 1 Northern wheat at Fort William was priced at approximately $1.40 per bushel. By a persistent decline throughout the ensuing months wheat was worth just over 50 cents per bushel by the end of the year. With the value of the bank-held collateral impaired, the pools in February, 1930, secured the guarantees of their respective provincial governments, and in November the guarantee of the Federal Government. The Federal guarantee was conditional upon the appointment of a government nominee as general manager of the Central Selling Agency. With the appointment of John I. McFarland to this position the Central Selling Agency became in effect a public rather than a producer-controlled marketing agency. Its primary purpose was to save the Canadian grain trade from total collapse and in this way to support the Canadian banking, business and agricultural community.

Mr. McFarland's activities in the wheat trade from 1930 to 1935 were financed by funds secured under Federal guarantee and came to be known as "stabilization" operations. These operations at first involved the withholding of the pool carry-over from the market. In July, 1931, Mr. McFarland began under Order-in-

Council instructions to purchase wheat futures for price stabilization purposes. On his appointment as general manager of the Central Selling Agency he had taken over some 77 million bushels of pool wheat. By May, 1935, he held a maximum of 230 million bushels of wheat and wheat futures. The maximum bank indebtedness of the Agency under government guarantee was $80 million.

In 1935 the Dominion Government established a national Wheat Board for the second time. This action did not, however, represent abandonment by the Government of its traditional view that Canadian wheat should normally be marketed by private agencies. It is true that one factor in the decision of the Government to re-establish the Board in 1935 was the persistent pressure of wheat producers to have it re-established. Over the period from 1920 to 1935 there were not more than four consecutive years without the open advocacy by producers of some form of monopolized marketing of the Canadian wheat crop. But when the decision to re-create the Board was finally taken it was only partially related to this fact and was much more closely related to political considerations and the necessity for regularization of stabilization activities in view of an impending federal election. The original government measure providing for a new wheat board (Bill 98, first read on June 10, 1935) contemplated a monopoly board—a monopoly *grain* board, in fact, rather than a wheat board. The measure as it was finally passed, however, after consideration by a special committee of the House, established the Board merely as an optional marketing channel which would free the producers from dependence upon the open market system without in any way interfering with that system. Mr. McFarland was appointed Chief Commissioner of the Board.

The development of the Dominion Government's wheat marketing policy since 1935 can now be traced in the record and experience of the Canadian Wheat Board over 15 years of extremely diverse production and marketing conditions.[2]

Under the Canadian Wheat Board Act the Board, which consisted of three members appointed by the Governor in Council, was

[2] See *Annual Reports of the Canadian Wheat Board, Crop Years 1935–36 to 1947–48* (Winnipeg, 1936–49). See also the admirable monograph prepared by Dr. T. W. Grindley, former Secretary and, since 1948, one of the Commissioners of the Wheat Board and his associates, *The Canadian Wheat Board, 1935–46* (Ottawa, King's Printer, 1947), pp. 57, *and Summary of Operations of the Canadian Wheat Board, 1935–36 to 1947–48* (Winnipeg, the Canadian Wheat Pools, 1949), pp. 12.

given power to accept deliveries of wheat from producers at a minimum guaranteed price (subject to the approval of the Governor in Council), and to make an equitable distribution to producers of any surplus resulting from the operations of the Board during any crop year, or, in the event of loss, to transfer such deficit to the Dominion Government.

In determining the guaranteed, minimum price the Board had to weigh a variety of economic, social and political factors. On the basis of the financial outcome it seems probable the 1935 price resulted from a fairly shrewd appraisal of (a) fair market value and (b) what the farmer with an average crop needed to "get by." On September 6, 1935, the Board announced a minimum price of 87½ cents per bushel, a figure slightly above the current open market price. The open market price immediately rose to 89 cents and stayed above the Board minimum for six or seven weeks—providing the producer with an optional marketing system. Many producers did, in fact, deliver to the Board during this period and when the market price finally fell below the Board's and remained there for almost eight months self-interest meant that all deliveries went to the Board. A market recovery in June restored the optional marketing plan. The Board finally received 150.7 million bushels—or about 70 percent—of total producer deliveries of 216.3 million bushels in the 1935–36 crop-year.

Replacement of the Conservative government by a Liberal administration following the Dominion General Election of October 1935, involved changes in the personnel and the selling policy of the Board. A new Board with J. R. Murray as Chief Commissioner replaced the McFarland Board at the beginning of December, 1935, and the Minister of Trade and Commerce announced a more vigorous sales policy designed to reduce "the concentration of surplus stocks of wheat in Canada."[3] Crop failures in Argentina and the United States in 1935 and the North American drought in the summer of 1936, enabled Canada to secure a large part of the relatively small world trade in wheat. As a result by the end of the 1935–36 crop year the Board had on hand only two million bushels of the 1935 crop and had reduced the "stabilization" holdings to 82.7 million bushels as compared with the 205.7 million bushels taken over at the beginning of December, 1935. The

[3] *Report of the Canadian Wheat Board, Crop Year 1935–36*, p. 2.

Board's operations showed a final net loss of $11.9 millions on the 1935 crop after the last sales in November, 1936.

For both the 1936 and 1937 wheat crops the Board fixed a price of 87½ cents, basis No. 1 Northern, Fort William or Vancouver, each year, but the Government in approving this price added a qualification that it would only become effective if the open market price should fall below 90 cents a bushel. With short crops in both Canada and the United States in 1936 followed by a disastrous drought in Canada in 1937 demand improved and prices were maintained well above the 90 cent level so that the Wheat Board accepted no wheat from producers in either crop year. Thus, for two years, the wheat policy of the Government denied farmers the opportunity of pooling their wheat through the Board under market conditions which gave "assurance that initial payments on the Board's minimum basis could be supplemented by substantial distributions on participation certificates."[4] The Board completed liquidation of the remaining stocks of "stabilization" wheat at a net profit of almost $9 millions so that the net loss on the Board's operations to July 31, 1938, were reduced to approximately $2.9 millions.[5]

With the opening of the crop year, 1938–39, the Government's retreat from intervention in wheat marketing came to an end. Both world and Canadian carry-overs were back to normal or even lower but in 1938 world wheat production reached an all-time peak with good yields harvested from a record world wheat acreage. World demand continued at a very low level and prices had fallen sharply, when, after a Royal Grain Inquiry Commission had recommended the continuation of the Canadian Wheat Board,[6] the Government announced approval on August 4, 1938, of a minimum Board price of 80 cents a bushel. Since market prices remained consistently below this figure all deliveries (amounting to 292.4 million bushels) went to the Board. The eventual loss to the Dominion Treasury on the 1938–39 crop, following final sale of the 86.5 million bushel carry-over in the crop year 1939–40 and a final accounting in April, 1942, was placed at $61.5 millions.[7]

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[4] H. S. Patton, "Observations on Canadian Wheat Policy since the World War" (*Canadian Journal of Economics and Political Science*, Vol. III, May, 1937, p. 224).

[5] See *Report of the Canadian Wheat Board, Crop Year 1937–38*, p. 2.

[6] See *Report of the Royal Grain Inquiry Commission* (Ottawa, King's Printer, 1938), p. 194.

[7] *Report of the Canadian Wheat Board, Crop Year 1941–42*, p. 23.

Faced with a heavy loss on the 1938 crop the Government had, at the 1939 session of Parliament, secured two important amendments to the Wheat Board Act: (1) the fixed initial price for the 1939 crop was established at 70 cents a bushel thus relieving the Board of this responsibility; (2) deliveries from any one producer were limited to 5,000 bushels in any one crop year.[8] Further Dominion legislation facilitated organization of agencies to market excess wheat on a co-operative basis.[9]

When a new crop year opened August 1, 1939, the necessity of continued governmental support of wheat prices was indicated by a carry-over of 100 million bushels and a new crop which promised to exceed 500 millions. The outbreak of war a month later brought an improved export demand and open market prices during the period of heavy movement from the farms approximated the Board's initial payment with the bulk of such deliveries going to the Board. With a further improvement in export sales beginning in December, 1939, the open market price began to rise again and, with buying for Canada's largest customer concentrated in the hands of the Cereals Import Committee of the United Kingdom, the open market price levelled out at about 90 cents—or about 20 cents above the Board minimum—from January until the middle of May, 1940.

Encouraged by this situation prairie farmers, having survived ten years of drought and depression, seeded two million extra acres of wheat in the spring of 1940 in the hope of recouping their fortunes in a wartime wheat boom like that of 1914–18. The 1940 wheat crop was scarcely in the ground before export markets for Canadian wheat felt the full impact of the German *Blitzkrieg*, Winnipeg futures dropped 30 cents in one week and at the request of the Board the Grain Exchange set minimum prices below which no trading would be allowed. By midsummer extensions of German conquest and the exigencies of the British blockade had left Portugal the sole remaining customer for Canadian wheat on the continent of Europe. Apart from a few small, scattered and uncertain markets, the Board was left to negotiate block sales to the United Kingdom such as the 50 and 100 million bushel sales in May and August respectively.

[8] *Statutes of Canada*, 3 Geo. VI, c. 39.

[9] *Statutes of Canada*, 3 Geo. VI, c. 34. See also G. E. Britnell, "Dominion Legislation Affecting Western Agriculture, 1939" (*Canadian Journal of Economics and Political Science*, Vol. VI, May, 1940, pp. 275–282).

The Board's statutory initial price of 70 cents a bushel continued in effect for the 1940–41 crop year but the storage problem presented by a new crop of 540 million bushels—a near record crop for the second year in succession—to be added to a 300 million bushel carry-over necessitated further regulation of deliveries. To divide available elevator space as fairly as possible, quota permit books based on sworn seeded acreage were issued to producers. A schedule

TABLE I. CANADIAN WHEAT: STATISTICAL POSITION[a]
(Millions of Bushels)

Crop Year Beginning August 1	Total Carry-over	Crop	Total Supplies	Apparent Domestic Disappearance	Available for Export and Carry-over	Exports of Wheat and Flour
1935–36	214	282	496	122	374	247
1936–37	127	219	347	99	247	210
1937–38	37	180	217	97[b]	120	96
1938–39	25	360	385	122	263	160
1939–40	103	521	624	130	493	193
1940–41	300	540	841	129	711	231
1941–42	480	315	795	145	650	226
1942–43	424	557	980	171	809	215
1943–44	595	284	879	179	700	344
1944–45	357	417	773	172	601	343
1945–46	258	319	577	160	417	343
1946–47	74	414	487	162	326	239
1947–48	86	342	428	155	273	195
1948–49	78	393	471	140	331	232[c]
1949–50	99	371[c]	470			

[a] Adapted from *Bank of Canada Statistical Summary*, August 1949.
[b] Exclusive of consumption of 5.7 million bushels imported from the United States.
[c] Preliminary estimates.

of storage payments on farm-stored wheat was introduced. In view of the probable absence of any effective optional marketing arrangement the 5,000 bushel limitation on deliveries was removed. Because of the abnormal export situation a processing levy of 15 cents a bushel on all wheat utilized for human consumption in Canada was imposed.[10]

Bulk sales, covering 220 million bushels, were the main method of wheat disposal for export. Little use was made of the futures

[10] See *Statutes of Canada*, 4 Geo. VI, c. 25. In the crop-year 1940–41, farm storage payments amounted to $6.1 millions; net revenue from the processing levy (discontinued, July 31, 1941) was $5.9 millions.

market. With the co-operation of producers and elevator companies it was possible to take delivery of all marketable wheat, but at the close of the crop year the Board held unsold stocks of 254 million bushels from the 1940 crop along with 115 millions from the 1939 crop[11] the latter eventually being disposed of at a loss of $8.2 millions to the Treasury.

From the beginning of the 1940–41 crop year, at least, Canadian wheat statistics had pointed, with harsh urgency, to the necessity of some curtailment of wheat production. (See Table I which shows the annual statistical position of Canadian wheat from the inception of the Wheat Board in 1935.) Faced with a prospective 500 million bushel carry-over in Canada the Government therefore announced, in March, 1941, that wheat deliveries to the Board and to the open market in the crop year 1941–42 would be restricted to 230 million bushels—the amount which it was estimated could be used to meet demand at home and abroad in the year—and that the accumulated stocks as at July 31, 1941, would be carried as a wartime reserve. In the administration of the new policy by the Board the "authorized acreage" for delivery purposes under the quota system was established for each producer on the basis of 65 percent of his declared 1940 wheat acreage. The Board's statutory initial price of 70 cents was to continue in effect with storage payments to producers on the same basis as 1940–41 "but only on the undelivered portion of the 230 million bushels." Compensation in the form of acreage bonuses for land taken out of wheat and diverted to summerfallow ($4 an acre) or to coarse grains or grass ($2 an acre) was offered. Diversion of wheat acreage to the production of oats and barley in particular was defended in terms of encouraging livestock production, the doubling of bacon and cheese exports to Britain, and the improved domestic market for livestock, dairy and poultry products.[12]

The Government's program resulted in a reduction of approximately seven million acres or 24 percent in the area sown in wheat. With a light crop total marketings, after all quotas had been lifted, at 228 million bushels in 1941–42 were exactly one-half those of the

[11] See *Report of the Canadian Wheat Board, Crop Year 1940–41*, pp. 13–14.

[12] See statements by the Ministers of Trade and Commerce and of Agriculture, *Canada, House of Commons Debates*, March 12, 1941, pp. 1595–1601. See also three government pamphlets (1) *Canada's Wheat Problem;* (2) *A Plan to Reduce Wheat Acreage and Make More Money Available for Necessary War Supplies;* (3) *Less Wheat in 1941 Will Help Win the War* (Ottawa, King's Printer, 1941).

previous year. With a smaller crop and the government's policy of treating former surpluses as wartime reserves, the open market price remained somewhat above the Board price throughout the year so that the Board received only 44 percent of farm deliveries in 1941–42 as against almost 90 percent of the large 1940 crop. Two sales, each of 120 million bushels were made to the United Kingdom (one in November, 1941, the other in May, 1942), and the total Canadian wheat carry-over was reduced by nearly 60 million bushels during the year. It should, however, be noted that since the greater part of the wheat economy was ill adapted to the government's diversification program the economic and social costs, particularly to Saskatchewan, were not inconsiderable.[13]

Government wheat policy for the crop year 1942–43 reflected no change from the previous year beyond the fact that the Board's fixed initial price was increased to 90 cents (after being held at 70 cents for the previous three years) with marketings limited to 280 million bushels for Western Canada compared with 230 millions for all Canada in the previous crop year. Wheat acreage reduction payments were continued, the reduction in wheat acreage was maintained, and the expansion of feed grain acreages was accelerated with the establishment in March, 1942, of minimum prices for oats and barley. In line with its over-all price control policy, the government held the price of wheat entering into domestic consumption to 77⅜ cents per bushel by payment through the Board of a drawback to millers.

With a very large wheat crop and record productions of oats and barley yielding large marketable surpluses of these grains, delivery quotas for wheat were increased very slowly to a maximum of 15 bushels per "authorized acre" and large stocks of wheat accumulated on farms in the main wheat areas, increasing the pressure to transform the wheat economy into a coarse grain and livestock economy. Thus, in the three years from 1940 to 1942 Canadian wheat acreage was reduced nearly 40 percent—from 28.7 to 16.9 million acres. Early in 1943 improved demand became a noticeable factor so that by March the open market price had moved above the Board's initial price and 38 percent of the total

[13] See G. E. Britnell, "The War and Canadian Wheat," (*Canadian Journal of Economics and Political Science*, Vol. 7, August, 1941, pp. 397–413), L. A. Skeoch, "Changes in Canadian Wheat Policy" (*Ibid.*, Vol. 9, Nov., 1943, pp. 566–569), V. C. Fowke, "Effects of the War on the Prairie Economy" (*Ibid.*, Vol. 11, August, 1945, pp. 373–387).

"authorized deliveries" were marketed through the Exchange and 62 percent through the Board.

On September 27, 1943, the Dominion Government announced a complete change in wheat policy which may be summarized under five heads:

(1) The discontinuance of wheat trading on the Winnipeg Grain Exchange;
(2) The raising of the fixed initial price to producers from 90¢ per bushel to $1.25 per bushel for No. 1 Northern wheat;
(3) The purchase by the Board, on behalf of the Dominion Government, of all stocks of unsold wheat in commercial positions in Canada on September 27th, 1943;
(4) The closing out of the 1940–41, 1941–42 and 1942–43 Wheat Board Crop Accounts on the basis of closing market prices on September 27th, 1943;
(5) The use of Government-owned wheat (Items 3 and 4 above) to meet requirements under Mutual Aid and to provide wheat for subsidized domestic purchasers.[14]

The new policy gave the Wheat Board a monopoly of Canadian wheat marketing. It made for efficient allocation of supplies to domestic and to export markets and a more effective utilization of storage and transportation facilities; it helped to restore the income of the western wheat producer which had been depressed by low prices and low delivery quotas while at the same time the problems of the Government's price control policy were eased by the large stocks which it now controlled.[15] Government purchase of the unsold stocks from the 1940, 1941, and 1942 crops at the closing price on September 27, 1943 (which was $1.23¼ basis No. 1 Northern in store Fort William) made it possible to arrange final payments to producers on all these crops within the next twelve months (see Table II).

The change in wheat marketing policy which was made in 1943 placed the Dominion Government in a strategic position for the formulation of policy for the post-war period. The Government made it clear that the first consideration would be to supply Canadian wheat in maximum quantities to meet the desperate food requirements of European countries. For the longer run the Government has consistently pursued the goal of greater market stability

[14] See *Report of the Canadian Wheat Board, Crop Year 1943–44*, p. 3.
[15] See Skeoch, *op. cit.*

for the wheat economy. Two decisive steps were taken in the implementation of this policy in 1946: the negotiation of the United Kingdom Wheat Agreement, and the creation of a five-year national pool for Canadian wheat.

The United Kingdom Wheat Agreement as announced July 24, 1946, provided that the Canadian Government would supply 600

TABLE II. CANADIAN WHEAT BOARD PAYMENTS[a]
(Basis No. 1 Northern Fort William)

Year	Initial Payment $ per bus.	Participation Payment $ per bus.	Total $ per bus.
1935–36	0.875		0.875
1936–37	0.875	(No deliveries to	0.875
1937–38	0.875	Wheat Board)	0.875
1938–39	0.80		0.80
1939–40	0.70		0.70
1940–41	0.70	0.06215	0.76215
1941–42	0.70	0.15336	0.85336
1942–43	0.90	0.12502	1.02502
1943–44	1.25[b]	0.12146	1.37146
1944–45	1.25	0.18677[c]	1.43677

Five-year Pool			Nov. 26/46	Apr. 1/48	Apr. 1/49
1945–46		1.25	0.10	0.20	0.20
1946–47		1.35		0.20	0.20
1947–48	Aug. 1/47 to Mar. 31/48	1.35 (1st basis)		0.20	0.20
	Apr. 1/48 to July 31/48	1.55 (2nd basis)			0.20
1948–49	Aug. 1/48 to Mar. 31/49	1.55 (1st basis)			0.20
	Apr. 1/49 to July 31/49	1.75 (2nd basis)			
1949–50	Aug. 1/49–	1.75			

[a] Adapted from *Summary of Operations of the Canadian Wheat Board.*
[b] Changed from $0.90 to $1.25 on 27 September, 1943.
[c] Participating payment was $0.18677 for top four grades and sub-grades; for No. 5 and lower, the payment was $0.20677 per bushel.

million bushels of wheat to the United Kingdom over the four crop years, 1946–47 to 1949–50, 160 million bushels for each of the first two and 140 million bushels for each of the last two years. For the first two years the price was to be $1.55 per bushel basis No. 1 Northern Fort William, Vancouver or Churchill; for the third and fourth years the price was to be negotiated above minima of $1.25 and $1.00 for the respective years. Exports outside the

contract would move at "world" prices with special regulations concerning the price to Canadian millers for domestic purposes.

As the domestic complement of the United Kingdom Agreement the Government announced the creation of a five-year pool for Canadian wheat. The arrangement here was that the Wheat Board would continue as the sole purchaser of Canadian wheat and that the crop years 1945–46 to 1949–50 would constitute a single pool, the producers to receive an initial payment on delivery with participation certificates to represent their further equity. The initial payment for 1946 was set at $1.35 and a 10 cent interim payment was declared on deliveries for the 1945–46 crop year to add to the $1.25 which had already been paid on such deliveries. Amendments to the Wheat Board Act in March, 1947, extended the monopoly control of the Board to July 31, 1940, the expiry date of the United Kingdom Agreement and of the five-year pool.

With Canada entering upon the final year of the Agreement and of the national pool, only a progress report of their results can be given. Wheat moved to Britain according to contract for the crop years 1946–47 and 1947–48 at $1.55 per bushel. For the first of these years the Board averaged $2.43 per bushel for wheat exported outside the contract (Class II wheat); for the second year the average was $2.88. On the basis of negotiation the price of wheat for Britain for the years 1948–49 and 1949–50 was set at $2.00 per bushel. Meanwhile the price of wheat for domestic milling purposes varied from $1.25 to $1.55 to $2.00 per bushel. It can be readily seen that the Board accumulated substantial funds over and above the $1.35 initial payment. With these funds the Board has made interim payments on participation certificates, 20 cents per bushel on April 1, 1948, and an additional 20 cents on April 1, 1949. With each interim payment made on past deliveries the initial payment was correspondingly raised for future deliveries. Canadian farmers have thus received $1.75 per bushel, basis No. 1 Northern Fort William, for their deliveries since August 1, 1945, and are receiving this amount as the initial payment for deliveries from the 1949 crop.

Table II provides a concise summary of the Wheat Board's payments on a bushel basis from its inception in 1935.

The Canadian producer and the Canadian Government are not alone in seeking to introduce a greater measure of stability into

the world wheat trade. In March, 1949, the representatives of some forty countries signed the International Wheat Agreement in Washington. This agreement, since ratified by the requisite countries to put it into effect, marks the culmination of nearly two decades of effort. The agreement covers the four-year period from August 1, 1949, to July 31, 1953, and carries the commitment of five exporting countries to supply and of 36 importing countries to accept quantities of wheat totaling approximately 450 million bushels of wheat annually. The exporting countries and their respective annual supply commitments are: Canada, 203 million bushels; United States, 168 million; Australia, 80 million; France, 3.3 million; and Uruguay, 1.8 million. Chief among the importers is the United Kingdom, committed to take 117 million bushels annually. Significantly absent from the list of signatory exporters are Argentina and Russia. The agreed quantities are to move at prices limited to specific maximum and minimum figures. The maximum is $1.80 per bushel for each of the four years. The minimum is $1.50 per bushel for the first year and 10 cents less for each succeeding year, or $1.20 for the fourth year.

It is too early to forecast the outcome of the International Wheat Agreement with any degree of certainty. In fact, the future course of the Agreement is hardly relevant to Dominion wheat marketing policy at the present time. The significant point in current circumstances is that governments of wheat exporting and importing countries no longer regard state trading in wheat as a temporary expedient to be abandoned at the first signs of the return to post-war normality. This is in sharp contrast to the general policy pursued in the years following the first World War. Though particular national wheat boards and international agreements may succeed or fail we are not likely soon to see a restoration of the open market system in the international wheat trade. So far as Canada is concerned the Government has already extended monopoly control of wheat to 1951 and at no time has the Canadian Government intimated that the open market system would be restored then or at any later date.

THE PROPOSAL TO MARKET COARSE GRAINS THROUGH THE CANADIAN WHEAT BOARD

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THE Government of Canada has recently announced its intention, beginning with the new crop year starting August 1, 1949, of making the Canadian Wheat Board the sole marketing agency for oats and barley produced and sold in the Prairie Provinces of Manitoba, Saskatchewan and Alberta. Since September of 1943 the Wheat Board has been the sole marketing agency for wheat in this designated area. The initial price paid to the producer has been fixed by the Governor-in-Council, that is, the Cabinet, while surpluses realized on the disposal of this wheat have, after the deduction of expenses, been pro-rated back to those farmers delivering wheat. The cash and futures markets are closed.

Although the ownership of the elevator system remains in the hands of private firms, or co-operatives, the Canadian Wheat Board Act of 1935 confers upon the Board the power to regulate the deliveries of wheat, oats, barley, rye and flaxseed to these elevators. The Board issues a delivery permit book to each farmer and may, at its discretion, establish delivery quotas. Also, the Board may require that, unless delivered under a permit book, grain may not be loaded onto a railway car without the permission of the Board. The Act gives the Board a monopoly over all inter-provincial and export trade in wheat and by an amendment of March 19, 1948, extends this monopoly to oats and barley.[1] At the time of writing, trading on the Winnipeg Grain Exchange in cash and futures contracts for all grains, other than wheat, is still taking place.[2] It is assumed that with the Board undertaking the marketing of oats and barley produced in the designated area in inter-provincial and export trade the cash and futures market will not be able to operate once existing contracts are cleared.

Although Bill 135 was passed more than a year ago the Government refused to proclaim this amendment until the governments

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[1] Bill 135, Fourth Session, Twentieth Parliament, 11–12 George VI, 1947–48.

[2] In the case of wheat, trading has never been legally prohibited but has simply ceased to occur because there isn't enough wheat outside the control of the Wheat Board to make it possible.

of the three Prairie Provinces had passed complementary legislation.[3] This complementary legislation, making the Wheat Board the exclusive marketing agency, was desired inasmuch as the Government feared that without it the powers given by the amendment might not be sufficient to ensure an effective monopoly in oats and barley marketing. The governments of the Prairie Provinces passed the requested complementary legislation but not before the Premier of Manitoba had asked some very searching questions as to how these grains were to be priced. These questions were never satisfactorily answered. Mr. Garson has since joined the Dominion Cabinet and, if such pricing criteria have already been devised, they have not been made public.

The proposal to place the marketing of these grains under the exclusive jurisdiction of a government board, with the consequent emasculation of the cash and futures market, has had the unqualified support of the Canadian Federation of Agriculture. Farmers in Western Canada have exhibited chronic dissatisfaction with the Grain Exchange and, at their request, this institution has been periodically investigated. Professor Fowke, after recording the appointment by the Dominion Government of seven Royal Commissions to investigate the grain trade between 1899 and 1939 has this to say:

> More than any other thing the wheat growers criticized the Winnipeg Grain Exchange with its organized speculation on the futures market. . . . The prairie farmers have attacked this organization for the past forty years as the symbol of their exposed and residual position within a price system in which other groups have entrenched themselves behind tariffs, price controls, and trade association agreements. For forty years Canadian agricultural commissions have defended the Grain Exchange, again as a symbol, but for them a symbol of the beneficence of the price system.[4]

Farmers in the specialized grain growing areas of the Prairie Provinces are subject to a high degree of both output and price

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[3] In a letter to the Hon. Stuart Garson, Premier of Manitoba, Mr. Howe, Minister of Trade and Commerce in the Dominion Government wrote: "Complementary legislation in Alberta, Saskatchewan and Manitoba is required to make Wheat Board prices effective. Provincial legislation in Ontario is desirable, but perhaps not necessary, as the competitor situation as between Western coarse grains and Eastern coarse grains will tend to hold prices in line." See *Manitoba's Position on Oats and Barley Marketing*, a copy of the correspondence between Hon. Stuart Garson and Rt. Hon. C. D. Howe, Minister of Trade and Commerce, King's Printer for Manitoba, Winnipeg, 1948, p. 11.

[4] V. C. Fowke, Royal Commissions and Canadian Agricultural Policy, *The Canadian Journal of Economics and Political Science*, Vol. 14, No. 2, (1948), p. 173.

uncertainty. Yields vary widely from year to year. When low yields coincide with periods of low prices, as was the case in the mid-thirties, the farmers' position is desperate. During a period of depression the terms of exchange turn against agriculture; farmers seek, therefore, to escape from the open market and to secure some type of administered price which will be less subject to cyclical fluctuations. Their experiences with a government wheat marketing monopoly have been rather satisfactory, partly because these boards have been in operation either during, or immediately after, the last two wars when the market prices of bread grains were extremely high. The prairie farmer is inclined to ask why, if he is to have a government wheat marketing monopoly, he should not have the same board market his oats and barley.[5]

The structure of the market for oats and barley is essentially different from that for wheat. Canada normally exports about two thirds of her wheat crop. The price obtainable in the export market offers a convenient guide to the government in fixing a price to the domestic consumer. At the present time the price of wheat for food and feed in Canada is the same as the price specified in the export contract with the United Kingdom, with, of course, allowance being made for differences in grade. Since roughly 95 percent of the total output of oats and 85 percent of that of barley is used within the country, and since there is an even less clearly discernible world market price for these grains, it seems unlikely that the export price will provide an adequate guide even if it were considered desirable to establish the domestic price at this level. Certainly the price of feed grains in the United States must be considered in fixing the price to the feeder. American corn, subject to a duty of eight cents per bushel, may be imported if its price is sufficiently lower than the domestic prices of coarse grains. Since corn prices are supported under the parity program in the United States the use of laid down corn prices as a guide would raise the price of feed grains to the Eastern feeder by the amount of the effective price support plus the tariff.

Coarse grains compete with wheat for available acreage in the

[5] The first Canadian Wheat Board of 1919 was a monopoly; it purchased all wheat offered for sale in commercial channels. The second Wheat Board of 1935 bought at a pre-determined initial price but the market for cash and wheat futures was left open until September of 1943. During this period the farmer had the option of selling either to the Board or on the open market depending upon the relative prices offered.

Prairie Provinces. Of the 60 million acres cultivated in these three provinces roughly 26 million is seeded to wheat, 14 million to coarse grains and the remaining 20 million are summerfallowed. The coarse grain acreage is concentrated in the black soil zone to the north where it claims a third of the cultivated acreage with a like proportion being devoted to both wheat and summerfallow. This is the mixed farming area where hogs, beef and dairy cattle enterprises are found on many farms, although wheat is still the primary cash crop. On the short grass plains to the south coarse grains claim some 10 percent of the cultivated acreage with wheat occupying nearly a half and summerfallow the remaining 40 percent.[6]

A high proportion of these coarse grains are fed on the farms where grown. Farmers' marketings average about 38 percent of production for oats and 46 percent for barley. Under the Freight Assistance Program roughly half the oats and barley marketed in Western Canada have been shipped to Eastern Canada and British Columbia. Although statistics for pre-war shipments are not available they are known to have been much smaller.

The operator of a typical one-hundred acre farm in Ontario or Quebec finds that he can increase his net farm income by intensifying production. Much of the land in Central Canada as well as in the Maritime provinces of New Brunswick and Nova Scotia is better suited for the production of grass than grain. Since 1941 the Dominion Government in an effort to expand the output of livestock, dairy and poultry products has paid the freight on some 753 million bushels of grain moving from the Prairies into Eastern Canada and British Columbia.[7] Between 1943 and 1947 farmers in Eastern Canada imported from the west as much feed grain as they, themselves, produced. Prior to the removal of price ceilings on grains and livestock in October of 1947 the feeder was also granted a "drawback" on purchased grain used for feed.[8] These subsidies

[6] Estimates are derived from unpublished data compiled by the Canadian Wheat Board from producers' delivery permits.

[7] Data from Feeds Administration, Dominion Department of Agriculture, Ottawa.

[8] The practice of allowing a "drawback" to the feeder of wheat is inequitable in its application as between feeders in Western Canada buying grain and those producing all or part of their own feed grains. A similar criticism may be made of the practice of distributing "equalization payments" on coarse grains. During the war and immediate post war years anyone exporting coarse grains to the United States was required to secure a permit and to pay to the Board the approximate amount by which the price in the United States exceeded that in Canada. This device per-

on feed grain, shared by the farmer and consumer, have served to expand the domestic market for western feed grain. The Canadian Federation of Agriculture urges their continuance as a permanent part of our agricultural policy.

How Will the Government Price Feed Grains?

This is certainly the fundamental issue which must be met once the open market is closed and the buying and selling prices of oats and barley are fixed by the Cabinet.[9] The first reaction of Mr. Howe, Minister of Trade and Commerce, whose department is responsible for the administration of the grain trade, was "to look to the Canadian Federation of Agriculture to recommend prices for oats and barley satisfactory both to producers and feeders."[10] Since the Federation represents both the grain growers in the west and the feeders in the east, one may assume that the reception accorded to this suggestion was something less than enthusiastic.

Despite the obvious advantages of this inter-regional trade in feed grains it complicates the problem of administered pricing. Prairie farmers would like to sell their surplus oats and barley at prices which would, over a period of years, maximize their receipts from such sales; eastern farmers, on the other hand, would like to pay as low a price as is consistent with an adequate and assured supply of feed grains. There is, then, a rather sharp divergence of interest between the two groups of producers as to the price which should be fixed for oats and barley.

Evidence of this divergence of interest between the producer and feeder of coarse grains is to be found in a resolution passed by the Western Agricultural Conference. This Conference, which is made up of delegates representing organized agriculture in the four

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mitted exports while protecting the domestic price ceiling. Receipts from "equalization fees" were pro-rated back to all farmers who had delivered grain.

The real cost to the farmer feeding grain which he had grown was the selling price of that grain. This was greater than the purchase price to the non-grain-growing feeder, in the case of wheat, by the amount of the "drawback" plus the participation payment, in the case of coarse grains by the "equalization payments." Although all of these payments, except the participation payment on wheat, have now been discontinued, this situation could recur if, once the marketing of coarse grains are brought under the Wheat Board, the price to the producer is fixed at a higher level than the price to the feeder.

[9] Subsection (c), section 29A of Bill 135, An Act to Amend the Canadian Wheat Board Act, 1935, provides that the initial prices paid to the producers of oats and barley are to be fixed by the Governor-in-Council, i.e., the Cabinet. Presumably the Board is to offer coarse grains at prices approved by the Cabinet.

[10] *Manitoba's Position on Oats and Barley Marketing*, p. 8.

western provinces, met in Saskatoon on January 20 of this year. The resolution dealing with coarse grains was as follows:

"that a joint effort be made to enable the Canadian Wheat Board to be the sole marketing agency for coarse grains and that any legislation giving the Canadian Wheat Board the same exclusive powers over the marketing of other grains as it now exercises over wheat, should be based on the principle that the Canadian Wheat Board should be an agency operating in the interests of grain producers, with a duty at all times to sell grain for the best available price whether in export or domestic markets, and should not be used as an instrument of government policy to limit domestic prices."[11]

This resolution immediately raises the question as to what the Conference meant when they asked that the "Board should be an agency operating in the interests of grain producers, with a duty at all times to sell grain *at the best available price* whether in export or domestic markets." The Wheat Board Act states that the Board "shall sell and dispose of grain . . . at such prices as it considers *reasonable* with the object of promoting the sale of grain produced in Canada in world markets."[12]

One might conclude that the Conference would have the Cabinet, or the Board, so fix the selling prices of coarse grains as to maximize the Board's receipts from such sales over any given period of time.[13] If this were done the government would, in effect, be establishing a monopoly on behalf of the western grain grower.

The Ontario Federation of Agriculture apparently does not believe that the Board, although the agent of the producer, need price feed grains in this way. At their annual meeting they passed the following resolution:

Coarse Grains Marketing

Whereas 72 percent of farm income in Ontario is received for livestock products;

And whereas reasonable stability in feeding costs is necessary to build and maintain this industry at high levels;

And whereas speculative fluctuations in the prices of coarse grains do not promote this necessary stability;

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[11] As reported in the Manitoba Co-operator of January 27, 1949.

[12] The Canadian Wheat Board Act 1935, subsection 1 of section 5 of Part I.

[13] The period of time considered may prove very important. Prices which would maximize receipts over a day or a week might yield less than maximum receipts over a longer period because of their effect upon feeders' production decisions. If the objective is to adjust price at that level at which the price elasticity of demand is unity, the price fixing agency might well find the elasticity of demand to be greater over a longer period of time and hence warrant a lower price.

Therefore be it resolved that the Ontario Federation of Agriculture in annual meeting assembled ask the Canadian Federation of Agriculture to press whatever negotiations are necessary to have coarse grains marketed in the prairie provinces come under the control of the Wheat Board, and in pressing this request, we agree that:

1. The Board should be the agent of the producers of coarse grains.
2. The selling policy of the board should be based on the free supply and demand situation for coarse grains both in Canada and in export markets but the Board should take steps to see that adequate feed reserves are maintained in Canada to safeguard the livestock industry which, in the long run, is the most important market for coarse grains produced in Canada.
3. The Board should have an advisory committee recommended by the Canadian Federation of Agriculture which committee should be representative of the growers and the feeders of coarse grains.

It is apparent that farm leaders in both eastern and western Canada believe that the government can establish prices which are "fair to producers and consumers alike." Both groups are anxious to escape from short run fluctuations in price which they regard as unnecessary. Any reduction which can be achieved in price variation and/or any increase in price certainty through the announcement of minimum or maximum prices in advance may well lessen the costs of producing both grain and livestock and represent a contribution to the general welfare.

While the resolution of the Ontario Federation stresses "reasonable stability in feeding costs" it also concurs in the fixing of selling prices at a level "based on the free supply and demand situation for coarse grains both in Canada and export markets." The Federation may have anticipated some stabilization in the price of coarse grains as a result of the maintenance of "adequate feed reserves."

There is, in the opinion of the writer, a distinct possibility that it is possible to devise and apply a system of administered prices which will do a better job, in terms of resource allocation, of getting grain and livestock products produced than the open market will do. It is not apparent, however, that such a system has been devised prior to the launching of this present program of state marketing. Western farm leaders do not want state marketing of coarse grains in order to secure a monopoly price for their product. They seem inclined to believe that it is possible to make the Wheat Board the sole marketing agency and at the same time retain the open market as a guide to the Board in fixing initial prices to the producer and selling prices to the feeder. Since the Board in marketing the

western crop will control over 90 percent of the supplies of coarse grains entering into commercial channels for the country as a whole the Board's selling price will determine the market price rather than the converse. Nevertheless, Mr. Howe, in announcing minimum initial prices to be paid producers in 1949-50, also stated that the Board's selling prices will be set from day to day and will depend upon the strength of demand.[14] It might be inferred that Mr. Howe anticipates guidance from the market in setting these prices. In any event prices to feeders will not be forward prices in the sense of being announced far enough in advance to reduce the price uncertainty confronting livestock producers.

The obvious danger is that the buying and domestic selling prices fixed by government for oats and barley will become "political prices." Rather than being established upon the basis of economic criteria, i.e., equating supply and demand, government will be subject to a strong temptation to fix grain prices at that level which will satisfy a maximum number of voters. Pressure may well be brought to bear upon the government by those speaking on behalf of the western producer to fix the price at a higher level; by those speaking on behalf of the eastern feeder to fix the price at a lower level. Caught between these two forces any government may well find that the easiest solution from a political point of view is to satisfy both groups, and, rather than setting one price for both sellers and buyers,[15] to establish two prices and then to bridge the gap between the higher price to the grower and the lower price to the feeder with a subsidy. The Canadian consumer should not prove too unhappy with this arrangement since he would indirectly benefit from a lower price of meats, poultry and dairy products. Having satisfied three groups, the government in power may find it possible to ignore the complaints of the taxpayer who would be called upon to make up any deficits incurred by the Wheat Board on its oats and barley accounts.

Prices determined in this way almost inevitably lead to trouble—and to ever more far-reaching controls. There exists a very high degree of inter-dependence among the prices of our various farm products. If the price of any one of them is pulled out of line by means of controls the effects are transmitted to the production,

[14] As stated in an official press release of July 20.

[15] Or, to be more specific, to make the Board's selling price equal to the price to the producer plus the cost of handling and transportation.

consumption and hence price, of the other uncontrolled products. If, for example, the price to the producer of coarse grains is fixed at too high a level relative to the price of wheat, farmers will seed too many acres to oats and barley and too few to wheat. If the selling prices of oats and barley are set too high relatively to the prices of hogs, cheese, butter or eggs, the output of these products will fall off. The control of coarse grain prices may well lead to control of the prices of those products which coarse grains are used to produce. Canada exports more than one-fourth of her total output of all farm products; she must, therefore, be prepared to produce those products which are in export demand and to sell them at competitive prices. This requirement precludes the setting of a fixed price for a product in Canada at a level higher than the export price unless the government is prepared to subsidize exports.

In the remainder of this paper we propose to examine briefly some of the factors which the government will need to take into consideration in fixing the buying and domestic selling prices of coarse grains. To begin with, it would appear that, since the acreage seeded to these various grains in many sections of the prairies is fairly sensitive to relative price, the relative quantities of wheat, oats and barley desired must be carefully evaluated when fixing the price to the producer. Moreover the price to the producer may not be fixed independently of the price to the feeder, or at least not after storage facilities are filled. The quantities of these grains which the government will wish to see produced will vary with the demand for wheat and feed grains and the strength of this demand must be evaluated in terms of specific selling prices as well as other relevant parameters.

In selling the Board is not obligated to ask the same prices which it pays to the producer, or even to fix its selling prices in such a way as to preserve the same ratio among them as existed among the buying prices. If one of these three grains is overpriced on either the buying or selling side the Board will soon find itself in possession of excessive stocks of that grain. The principle involved in fixing prices so as to equate supply and demand is that of permitting the choices of the ultimate consumer to be reflected back to the producer in order to permit the latter so to allocate his resources as to satisfy the consumer's preferences. If the Cabinet's objective in pricing these grains is to equate supply and demand it seems quite possible, by falling back upon past experience of producers' and feeders'

response to price and by being given some leeway between buying and selling prices through resort to monies appropriated by Parliament, that this objective may be attained. One marked advantage of this method of pricing over that of the open market is that it would permit forward pricing—i.e., informing the producer of the respective minimum selling prices of his grain before he ever puts his seed into the ground.

In pricing feed grains careful consideration will also need to be given the relationship between grain and livestock prices. The output of livestock, dairy and poultry products varies, not only with the prices of these products, but also with the relationship between the prices of these products and the price of feed grains. If livestock and poultry products are to be sold in the open market, supplemented where possible by export contracts, the government will be in control of one of the important determinants of output and hence, indirectly, of price of some, at least, of these products. It is true that the government has more direct means of controlling the price of certain of these products, e.g., by negotiating export contracts for hogs, cheese and eggs or through floor prices for butter. So long as our beef cattle are permitted access to the United States market at prices anywhere near their present level the prices of feed grains will have little effect upon the supply of beef.

In the event that we continue to be able to negotiate export contracts for livestock products with the United Kingdom the selling prices of feed grains might be fixed at a level designed to fill these contracts and to satisfy the domestic market at comparable prices. With reduced contracts and shrinking non-contract export markets for livestock products, feed grains might be priced high enough to reduce the supply of such products to fit these markets. This approach might encounter heavy opposition from the feeders of coarse grains; it might also involve production or marketing controls on grain if supply exceeded demand once storage stocks became large.

However the farm pressure groups on whose insistence this step is being taken do not expect the government to attempt merely to establish "equilibrium" prices. They favor government marketing because they believe it offers a means of reducing cyclical variations in the price of grains. In other words they expect the buying prices of oats and barley to be fixed at higher than market levels during periods of low market prices and, perhaps, lower than mar-

ket levels when grain prices are high. The support accorded the wheat contract with the United Kingdom would seem to indicate that prairie grain producers will accept moderate prices if some degree of longer-run price stability is assured to them.

The necessity of satisfying this further requirement is going to complicate greatly the government's pricing problem. Prices are now to be used as means of reducing those wide fluctuations in farm income which result from cyclical variations in the price of farm products. If during a depression, in order to support or stabilize farm income, the prices of oats, barley and wheat are held at levels higher than those needed to establish equilibrium between supply and demand, it will be necessary either to support the prices of rye and oilseed crops or limit the acreage or deliveries of the three grains whose prices enjoy support. Otherwise farmers will simply fail to produce those crops whose prices are not supported. In the park belt this may also apply to the acreages normally seeded to forage crops where such land may be used for grains.

No provision is made for the accumulation of a fund from the excess of selling over buying prices during periods of high grain prices to be used to keep buying prices above selling prices when grain prices are low. Bill 135 limits the pooling period for coarse grains to one crop year thus preventing pooling over a period long enough to cover years of both high and low prices. Probable deficits incurred by the Wheat Board on its coarse grain accounts during periods of low grain prices will be made up from the Consolidated Revenue Fund while surpluses will be pro-rated back to producers. This means transfer payments from the taxpayer to the farmer over a period of years. One disturbing feature of this policy is that once the open market has been closed there is no reliable way of computing the volume of such transfer payments.

The Agricultural Prices Support Act of 1944 excluded wheat from the products whose prices it might support since this grain was already being marketed by a government agency. In fairness to the western farmer it should be said that he is not supporting government marketing of coarse grains for the purpose of exacting subsidies from the federal treasury. By selling through a pool every farmer will receive the same price for the same grade irrespective of the date within the crop year at which he makes delivery of his grain. Both producers and feeders expect a more stable price of feed grains than under an open market. The first of these two advan-

tages might be secured by means of a voluntary pool.[16] Government storage operations might serve to reduce substantially those fluctuations in price arising from variations in yield. It is by no means certain that a state marketing monopoly is the best means of attaining either of these two objectives.

The initial price which the Government has now decided the Board shall pay for oats and barley is the support price announced on March 15, 1949. Initial prices are thus being used as a means of supporting the incomes of coarse grain producers just as with wheat. Actually, of course, the same farmers produce both wheat and coarse grains. In the event that the Board's initial buying price is higher than its domestic selling price coarse grain producers may prove reluctant to feed their grain to livestock in competition with specialized feeders who can obtain feed grains at a lower price from the Board. There appears to be no practical administrative method of buying feed grains from the grower-feeder at the higher price and selling it back to him for feeding at a lower price.[17]

The difficulties of establishing prices for coarse grains which will serve the dual function of equating the supply of and the demand for these grains and at the same time providing stabilized prices in the face of fluctuations in the level of employment and national income seem virtually insurmountable. If the latter objective is considered the more important, resort will likely be had either to marketing or production controls to achieve the former.

This nationalization of the marketing structure for coarse grains may have international as well as national implications. Canada would seem to be falling in with the present trend toward state trading observable in so many other countries. Once the government had assumed the responsibility of marketing Canadian wheat in peace as well as war there seemed no good reason to the farmer why it should not market coarse grains. There may be equally cogent reasons why government should market the beef, hogs, cheese and eggs which are produced from coarse grains.

The economist has a prejudice in favor of using the price system as a means of informing producers what products consumers are willing and able to buy. Many writers on the economics of socialism

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[16] The Government has asked the Canadian Wheat Board to conduct a voluntary pool for flaxseed in 1949–50. The initial price is fixed at $2.50 per bushel for No. 1 C.W. flaxseed basis in store Fort William.

[17] See above footnote 8.

would retain the price system as the most effective means of performing this function.[18] If government control of the price structure for grains is to be used as a means of stabilizing farm income over the ups and downs of the business cycle the implications of such control need to be thoroughly explored. Few would quarrel with the objective. The important question is what is the cost and what kind of by-products come wrapped in the same package with price stabilization. Since the government has indicated its intention of implementing Bill 135 at the beginning of the new crop year, August 1, more of the answers will have been placed on the record before this article is published.[19]

[18] See Abram Bergson's essay, Socialist Economics, in *A Survey of Contemporary Economics* edited by Howard S. Ellis, Blakiston, 1948, pp. 432–440.

[19] A Canadian Wheat Board statement issued on August 4 and after the above article was written, gives some idea of the Board's resale plans. The Board is not taking over the very considerable stocks of old crop oats and barley which were delivered by farmers prior to August 1st, and which are still in the process of being marketed by the present holders. This means that for some time after the marketing of the new crop begins there will be two classes of coarse grains for sale, the new crop stocks handled by the Wheat Board and the old crop stocks following the open market route. Since most of the old crop stocks have been hedged in the Winnipeg futures market for October and December delivery, open market trading in grain for future delivery as well as in cash grain is bound to continue until marketing of the old stocks is finally completed.

In view of this situation it is not surprising that the Wheat Board should now announce its intention of making general use of the existing facilities including the future trading facilities of the Grain Exchange. At present the Board is offering to sell grain at daily quoted prices in store the Lakehead, both for immediate and future shipment, to dealers for distribution to users. These selling offers are made in competition with the private trade which is marketing the carryover from last year's crop. For the time being at least, therefore, the Board has left the way open for eastern dealers to continue buying as heretofore. It is difficult to see how this open market system can possibly continue in operation once the old crop stocks have been finally disposed of.

THE LOGICAL FOUNDATIONS OF ECONOMIC RESEARCH

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TWENTY-FIVE years ago agricultural economists were deeply concerned over the need for improved methods of research. The efforts in this direction and the assistance of the Social Science Research Council are well known, and need not be recounted here. Whatever else may be said about this effort, it gave impetus to great improvement in statistical methods of economic research, which has been of inestimable value; some of the top flight statisticians of the country are to be found among research workers in agricultural economics.

There is again a deep sense of uneasiness about methods of research in agricultural economics. But now, if I sense the situation correctly, there is little expectation that a well chosen committee might go to some authority, such as Karl Pearson, and find adequate answers to our problems. What has happened, is that now the whole underpinnings of economics itself are open to question. Consequently, just as it is no longer possible to find an adequate research method to apply to our problems, so it is no longer possible to find an adequate "pure" economics to apply to the economic problems of agriculture. Two conclusions seem obvious: (1) that comprehensive methods of investigation must be devised by agricultural economists out of our own investigation, and (2) this presents an unusual opportunity to contribute to economic and social science theory generally if we have the wit to do the job before us.

As I have tried to analyze and understand economic theory and scientific method in economics I have become impressed by both the need for, and the possibilities of, a restatement of our problems in the light of logical theory. Such an effort requires a consideration of the very foundations of methodology in economics. This paper reports a part of an attempt to state the methodological issues in economics by an examination of the relevant issues in economic theory, logical theory and statistics. From the viewpoint of systematic generalization, logical theory is both more inclusive and more fundamental. Consequently this essay takes the form of analyzing the whole complex of issues from the perspective of logical analysis.

I have thought for a long time that the issues in economic analysis might be clarified by systematic recourse to logical theory. For example, it appeared likely that a thorough study of John Stuart Mill's *Logic* might reveal the true theoretical foundations of classical, and possibly neo-classical, economics. Furthermore, I supposed that modern logical theory might help to explain the peculiar directions of modern theorizing in economics. I do not claim to have mastered the several theories of logic or any one of them. But the work of colleagues and some of my students, as well as my own effort, has deepened my conviction that a real understanding of logical theory by economists would greatly strengthen our work in research and theoretical economics. As I have read current philosophical theory, the works of Dewey and G. H. Mead have been most concerned with the issues that grew out of my attempts to understand economic analysis. I therefore set out to achieve sufficient mastery over their works, especially Dewey's, to enable me to examine the methodological issues in economics in the light of their insight.* Although I do not see that the social sciences are quite so primitive as he concludes in his chapter on Social Inquiry in his *Logic*,[1] I am convinced that the basic argument in his logical theory may well prove to be the most profound contribution of modern times to social science methodology.

The General Issues

As we think systematically we make such distinctions as are necessary for accurate thought. Just precisely what the distinctions are in terms of basic issues depends in part upon the general view-

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* Most of the specific investigational issues are stated in terms of the problems of the economics of agriculture, the field of my research program. I have tried to test the ideas presented here against the issues as presented by the most diverse viewpoints in economics; but no doubt the particular turn which my thinking has taken has been influenced most by my graduate teachers who left with me countless suggestions and statements of dilemmas or paradoxes—especially I find myself returning again and again to the remarks of Professors B. H. Hibbard, J. R. Commons, and F. H. Knight. From the formal study of philosophy, I owe a heavy debt to Professors Max Otto and Charner Perry. Among my colleagues, I have benefited greatly by the criticisms and comments over the years by Carl Bogholt, Horace Fries, Erven Long, Walter Morton, James Earley, and Martin Bronfenbrenner. Not the least of the stimulus to this attempt to work through the issues in economic methodology have been the pressing questions of my students. Out of that profound wisdom which doubts all things, students manage somehow to keep one forever in that strange attempt to get his feet on solid ground by thinking about things which are over his head. To the participants in the several Land Tenure Workshops sponsored by the Farm Foundation I am also indebted for countless suggestions.

[1] John Dewey, *Logic, The Theory of Inquiry*, Henry Holt and Company, 1938.

point of the analyst. These viewpoints are to be distinguished from each other on two different bases: (1) what we may call the philosophical frame of reference and (2) the degree of generality attempted in the viewpoint.

As to the first, I accept as a working hypothesis for these analyses the general viewpoint most accurately characterized as instrumentalism. I do this out of a conclusion that here better than anywhere else do I find the basic distinctions relevant to social inquiry as practiced by economists. One of the critical issues here is the question of whether or not mind is a creative factor in the social process. Unless thinking can do more than merely reflect "reality" as a mirror, or observe it as an Olympian spectator, there is no possibility of inquiry being creative. Much of the cynicism of modern economic thought comes from the uncritical incorporation therein of a basic assumption that thinking cannot possibly have any fundamental influence on "reality."

One of our difficulties in economics is that the field is so vast that different people are thinking about different aspects of the whole. If someone sets out to analyze the problems of price predictions, everyone, including the investigator himself, should recognize that what he has to say will be only obliquely relevant to questions of economic organization or control. Again, if we are striving for a statement of the conditions of general equilibrium and achieve this by assuming that the critical questions of valuation are all settled, then we should recognize that we have said nothing about valuation except what we assumed in the first place.

In short, our purposes and problems dictate the required scope of analyses. This might seem to be simple but in the present state of economic thought it is indeed a very difficult matter. Not the least of the difficulties is the fact that economic theory is being taught as a technique of analysis without adequate formulation of the relations to the fundamental issues either in a truly general theory of economics, or of the requirements for investigating genuine social problems. We should not, however, minimize or in any way discredit these techniques of analysis. The problem in this context is rather one of formulating the more comprehensive issues so that we can put economic theory to more fundamental tests than logical consistency.

For these and related reasons I have tried to think my way through the issues by relating them to the basic insights of logical

theory. As we do this we find ourselves drawing careful distinctions between fact and idea; and examining the question of whether economic theory is a system of general ideas, inquiring how economic theory is related to hypotheses in investigation, etc. To make and discuss such distinctions we must have some common understanding of the nature of propositions and their relation to judgment; of induction-deduction; of definitions and classification; of the theory of predication; and other elements of logical analysis. One of the most difficult tasks in all this, at least for one whose primary training is in economics, is to keep clearly in focus the logical nature of the distinctions.

Kinds of Scientific Generalizations: General Propositions

We begin the exposition by accepting the conception that there are two distinct kinds of scientific generalizations: the abstract and the factual.[2] The validity of this conception will be argued subsequently. Abstract generalizations are technically known as Universal Hypothetical Propositions; generalizations of fact are known in logical theory as Generic Propositions.[3] Abstract universal propositions formulate the basic argument of scientific theory, including economic theory. The generic generals state the generalized facts, the established facts, in propositional form. As will be developed in more detail in subsequent sections of this paper, scientific generalizations from investigations of fact can be achieved only by the use of the hypothetical universals. This requires some examination of the actual processes of generalization—of the relation between induction and deduction. Also it will be argued, that the content of hypothetical universals is given by the nature of the problem under investigation.

A proposition is distinguished from a mere social communication by the function it performs rather than by the form. A proposition is an assertion which is grounded in argument and evidence; it is a statement which is a part of a set or series of statements each of which is framed with reference to resolving a question, by pointing

[2] Dewey, *Logic*, especially Chaps. XIV and XV, pp. 264–310.

[3] Readers will recognize the difference between accepting this distinction here for purposes of simple statement of the argument and acceptance of the same as a valid hypothesis for the explanation of scientific theory. The latter is of course the fundamental question. I shall attempt to present the main points of the basic argument for the validity of this distinction—but a complete analysis of the issues would require that we cover the whole field of logical theory. Such is manifestly impossible in this essay.

toward some "cumulative convergence in effecting final judgment." A logically complete proposition indicates its own grounds for validity.[4]

The reasoning back of this assertion that there are two fundamentally different kinds of scientific generalizations will become evident as the argument develops. But I do not want to gloss over the fact that this is a genuine issue. For example, once this distinction is granted the oft repeated claim that a theory is warranted because the assumptions upon which it rests "fit the facts" must be re-examined. Also, new light is shed upon Professor Knight's perennial insistence that great confusion is injected into economic analysis by the erroneous belief that economic theory describes existence.

Professor Frazer maintains that there are not two different sets of propositions, but that two different aspects of the same propositions should be distinguished.[5] Mr. Hutchison, however, holds that economic theory is so completely separated from generalization of fact that pure theory is simply "verbal"—a set of seemingly independent propositions.[6]

I cite these different interpretations merely for the purpose of indicating the order of issues involved in the acceptance of a position regarding the kinds of propositions. But the issues cannot be argued out now. Here I simply observe that in the argument of this paper, economic theory is considered as falling within the realm of universal hypothetical propositions. Such propositions do not describe the facts; rather the function of these propositions is to "prescribe" the conditions which must be met in classifications of fact. As such, economic theory is an elaboration of definitions, but

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[4] See Dewey, *Logic*, p. 321. Also: "When it is said that 'iron is a metal' the proposition does not appear rational because we cannot convert it simply into 'metal is iron.' But the proposition as it stands is not logically a complete proposition. It does not indicate or even suggest its own grounds. At most it is either a sentence communicating information or is a proposition preliminary to further inquiries. The complete proposition is 'Iron is a metal possessed of such-and-such differential characteristics.' Any metal having these specified properties is iron, so that the proposition is logically, not verbally, a proposition regarding a *relation* of kinds." p. 308–309.

[5] *Economic Thought and Language*, L. M. Frazer, A. & C. Black, Ltd. London 1937, p. 52.

[6] *The Significance and Basic Postulates of Economic Theory*, Hutchison, T. W. Macmillan, London, 1938. In critical discussion of the issues involved in this positivistic conception of theory and methodology see Professor Knight's review, "What Is the Truth in Economics?" *Journal of Political Economy*, Vol. 48, 1940, p. 1; and the reply and rejoinder in same Journal, Vol. 49, pp. 732ff., Oct. 1941.

the definitions are not arbitrary or to be selected at the pleasure of the theorizer. Rather the definitions and theories are elaborated from insights derived from actual existential relations. The solution accepted in this paper is that the two different kinds of generalizations are distinguished by analyzing the function which they perform in inquiry.

There is a fundamental difference also in the way in which propositions within the two types are related to each other. Hypothetical universal propositions come in series; each proposition follows from the preceding. They are related by logical necessity, and may be proved or disproved by logical analysis. Generical generals and other propositions about existences are developed in sets. As the propositions of fact are developed they gradually converge upon the point in question. In the latter, "proof" can never exceed some degree of probability.

Warrantable Statements of Fact

We may go right to the heart of the matter by asking the general question, how does one establish a statement of fact? This question has been answered in different ways; and this variety of answers can be found all through economic literature.

Those who would simply collect observations of particular instances and then generalize from this collection, accept the conception of a fact as given in and of itself ready to be picked—so to speak. So considered, facts are simply data (literally the given). If you follow out the argument of this approach, you come eventually to the conclusion that the basic classifications of fact are (a) either given in nature (the Aristotelian view) or (b) in some form of sensational empiricism such as that the basis of classification is simply in the regularity of the repetition of impressions of the observer. In either case the facts can be known without discriminating thought.

It should not take very much argument to convince any investigator of the fundamental error of the above conception. Facts are not *given;* they are *taken*—taken by a process of selective discrimination. Facts do not just happen, but happenings can be converted into facts. Only "things" just happen. In common speech we more frequently use the negative—as "nothing happened." But stated either way the "given" nature of happenings is suggested. When we attempt to understand "what happens" we use thought to dis-

criminate "happenings" into "events." Again common speech notes this distinction by referring to happenings as "minor events" or "big events" and so on. Inquiry (research) discriminates happenings into events and these are "taken" to be facts, although we frequently *mis*-take something to be a fact which isn't. Events are converted into facts when we understand the relations between them, the conditions upon which their occurrence depends.[7] Facts are questions answered by inquiry into events. The genius of finding facts is largely knowing what questions to ask.

Fact finding is more than observing what happens. To anticipate subsequent argument, facts are derived by judgment; and judgment is the core of the method of generalization. Regardless of the degrees of refinement in procedure, of sampling or otherwise, ultimately the events are "judged" to be facts. This appears to hold whether we consider few events as on one farm, or a mass of events as in the making of a crop estimate.

It turns out, therefore, that the validity of the facts themselves turns on the methods of generalization. The view adopted and developed here is that particular observations are developed into facts through a process of comparison-contrast guided by a system of definitions—which definitions are a part of the comprehensive system of abstract conceptions.

The Methods of Generalization

(*1*) *The general pattern of inquiry; problem formation and solution.*

In any research effort worthy of the name, the attention of the research worker comes to a definite specified focus. We do not just research in general. We investigate something. How that something is chosen is not crucial provided only that the problem is real, not fanciful. In the practice of the advanced sciences, many, if not most, of the research problems are set by discrepancies between observed occurrences and previously accepted explanations. But

[7] In Dewey's statement: Facts "are selected and described . . . for a purpose, namely statement of the problem involved in such a way that its material both indicates a meaning relevant to resolution of the difficulty and serves to test its worth and validity," *Logic*, p. 113. Or in more general terms: "The objects of science . . . are an order of relations which serve as tools to effect immediate havings and beings"—John Dewey, *Experience and Nature*, Open Court Pub. Co. 1929, p. 136. Again: "Knowledge . . . signifies events so discriminately penetrated by thought that mind is literally at home in them." *Ibid.*, p. 161.

many of the problems studied by agricultural economists, at the state Experiment Stations at least, have been those posed in the first instance as immediately practical problems of farmers. For purpose of exposition here we shall direct our thinking to the formulation of a procedure in terms of analysis of an immediately given problem at the farm level. But however theoretical or immediately existential the problem, the ultimate test of a valid solution must be the final explanation resolving the doubt, or answer to the question. This is checked by acting upon the conclusion; the final test for all sciences short of (in terms of abstractness), or other than, pure mathematics is practical relevance.

(*a*) *The situation; confused—problematic.* Perhaps everyone who has worked in a state Experiment Station has had the experience of being confronted with an assignment something like this: "Something is going wrong out at Silver Creek," or "The farmers can't get any help," or "Their farms are being foreclosed," or "The livestock are coming to market in bad shape," or "The cooperative is about to go bankrupt," or "What was once an active rural community is now dead," etc. The details are infinitely varied, but the common import is a situation of confusion, doubt, tension.

The first thing to get clear is whether or not the confusion is in the situation. If it is, this gives an objective base upon which to work. From this situation a problem is gradually defined. But there is a vast difference between a confused situation and a problem. What intervenes is the first stage of analysis—defining a problem. A problem is essentially that aspect of the situation which if modified will correct the difficulty. In short, the problem is the limiting factor in the reconstruction of a situation. The solution of a problem must be conceived of as in some way related to the potentialities of the situation—the accessible or available alternatives. But the situation is not all confusion, otherwise investigation could scarcely be fruitful. The problem has to be set off against the stable parts of the situation which can be taken as reliable or dependable.

There are two closely related but separable issues in the conception of a problem. The *nature* of a problem and the logical function of problem solving. It is important that we conceive of the nature of a problem in some way which actually *admits* of solution. It is very common practice for economists to attempt to treat "problems" as the discrepancy between the actual situation and some

"ideal" assumed to be the relevant solution.[8] Under this conception of a problem the "solution"is simply a priori and arbitrary without regard to available alternatives in the situation.

In the context of the present argument, however, the role of problem solving as a method of verification is the more critical consideration. The crux of the issue is simply this: that the only alternative which we have to the validation of inquiry by problem solving is a reliance either upon the self evidence of fact or principle as the foundations of knowledge—or upon revelation. Both of the latter alternatives are incompatible with a genuinely scientific viewpoint. It is the recognition of this point, I infer, which leads almost everyone to talk about problems and problem solving, regardless of viewpoint or of the way genuine problem solving fits into their implicit theory of knowledge.

But if one is to conceive of problem formation and solution as a fundamental part of inquiry the actual procedures of investigating a problem need to be conceptualized. To return to the instance of investigating an immediate problem, when the investigator is handed the assignment he likely looks first for analogies.[9] Gradually he begins to assemble some possibly relevant facts already known; number of farms, or kinds of livestock, or the history of a school or a church, etc., depending on the situation being analyzed. Correlatively he takes a provisional inventory of explanations previously given and generally accepted; then if he is wise he will pick up unaccepted, even seemingly foolish, suggestions. The known facts are the raw materials of the "facts of the case" and correlatively the explanations are the beginnings of the hypotheses to be formulated as a solution to the problem. So far all this is general and preparatory; the facts and suggestions are provisional—provisions for the explorations, in the literal sense of the term provision. If similar problems have been investigated before, and the procedure is well established, the investigator will have available a large body of facts, presumably relevant, and a comprehensive

[8] See for example Gale Johnson's "Contribution of Price Policy to the Income and Resource Problems in Agriculture," this Journal, Vol. XXVI, No. 4, November 1944, p. 631ff.

[9] This is one place for the method of analogy—sometimes treated as a separate method. For example, "Research Method and Procedure in Agricultural Economics," Social Science Research Council, 1928, pp. 15 and 298. The position taken here implies that the use of analogy is simply a distinguishable phase in a continuous process of research. This is essentially what the authors of "Research Method" also intended.

body of theory which will serve as the matrix for the hypothesis for this particular investigation.

But the actual inspection of the situation is something different. Here one sees at first, say, farms of different sizes and qualities, occupied by persons of varied ages and capacities, etc.—in short, a cluster of unique events. The first stage of the actual exploration or inspection is to note the "qualities" of things. You talk to first one person and then another—just visiting but thinking all the while. You visit some more and "compare notes." The notes you compare are simple assertions, each one rooted in an observation. Assertions of this order are simply statements regarding observed qualities but they don't "make sense" as we say. In terms of logic the assertions are "particular propositions." They may be interesting but they are scarcely instructive.

So far we have noted only qualities. The observations of qualities make sense only when qualities are taken as the "traits" of something. The observed qualities become evidence, as evidential traits. Or as we say quite accurately in common speech, "I saw this but what does it mean?" When qualities become the signs of something, they take on significance.

Here is the root of the necessity for hypotheses, theories, systematically formulated concepts. For a quality to become a trait, or a sign, it must be related to some systematic system of concepts.

In exploring the situation further, the investigator may suddenly "get an idea." He sees a possible connection between "particular" assertions. This connection when analyzed is stated as a conception; subsequently, if the analysis prospers, the conception directs further comparisons and contrasts and the situation begins to clear up. In systematic inquiry the hypotheses guiding a particular investigation are elaborations of suggestions rooted in some "growing point" in a comprehensive system of theory. The "meaning" of the facts in this problem then merges, through discourse, with the general system of guiding theory.

In terms of logical theory, the particular propositions are converted into "singular" propositions about connections among things. These singulars when classified into a comprehensive generalization take their place as members of a kind, and are then comprehended by a more general proposition—the generic general. The farm machinery rusting out-of-doors becomes a sign of a neglectful farmer; which in turn is one of a larger class of farmers

who are likely to have high costs in relation to returns, or permit their farms to erode, or their livestock to become diseased, or their children to become truants. What the quality becomes a sign of depends in general on the purpose and context of the investigation, and in terms of procedure, upon the hypotheses that are then operative in inquiry.

The hypotheses formulate the alternative possible solutions to the problem and are tried, reshaped, rejected or then finally accepted as the best explanation possible (under the circumstances).

In terms of a problem, the problem is not clearly formulated until the possible solutions are systematically stated. The problem is resolved by testing the several hypotheses, as possible explanations when used in conjunction with the facts—both the facts of the case brought into the analysis from previous studies and the facts produced in this specific inquiry under the guidance of the very hypotheses for which the facts are evidence.

It is much easier to see from our experience how the formulation of a problem suggests the solution than it is to comprehend the deeper insight that a problem is not formulated until a solution is projected. Instances abound from the work of agricultural economists to illustrate how the formulation suggests a subsequent solution. It was in the early 'twenties, I believe, that the index of the prices of things farmers sell and the index of the prices of things farmers buy were published in parallel fashion in the *Agricultural Situation*. On the surface this appears to be within the conception of Say's law that goods exchange for goods. But this publication undoubtedly gave great impetus to the practical solution which set out to achieve "parity" prices for farm products. Similarly, Professor Knight's formulation of "uncertainty," which was devised as a part of a rigorous statement of the theory of distribution, when taken to represent a "problem" in agriculture leads directly to the solution of "forward pricing" as a method of solving the problem of uncertainty in resource use.

Clearly, then, the formulation of a problem is a gradual process—in which events are converted into relevant facts, and facts are taken, or discarded, as evidence. This requires a continuous shifting back and forth from clearer evidence to refinement of hypothesis.

(*b*) *The logical function of schedules.* Somewhere in this process of

investigating a situation, if a field survey is to be made a field schedule has to be drawn up. A real schedule differs from a mere listing of observations simply in this: that in the schedules qualities observed are treated as traits of something. And they are traits only in so far as the problem has been thought through. It is therefore not surprising that rarely, if ever, is a schedule found to be completely adequate. This also indicates why some of the most revealing observations in a study may be those written in the margins or on the back of the schedule. They are notations of qualities which are found upon further analysis to indicate significant traits. The reason may be equally evident for the crippling or blinding effect of stereotyped questions on a schedule imported from previous studies. Questions on schedules, to be effective, need to be components of a system of concepts which have been thought together with specific reference to the problem at hand.

(2) *Induction and deduction.*

It is a commonplace that induction and deduction are both necessary in systematic inquiry. But what is meant by the two operations, independently and conjunctively, is less frequently explained. Although the two processes are so mutually involved as to make inquiry impossible without both, the inductive function will be examined first.

It is generally agreed that induction is the process by which generalizations are arrived at. The significant questions turn on *how* this is done. In the viewpoint incorporated in this paper,[10] the critical point in induction is the transformation of a particular into a singular. The active process of generalization centers here and amounts to the construction of a singular from a particular.

An illustration may help make this point more understandable. A farmer is operating a relatively small place, yet seems to be making a good income without extraordinary effort. As an instance he is unique—in common speech we say, "he is in a class by himself." This of course is logically equivalent to saying that he isn't in a "class" at all. But a farm management survey will classify him. How? If meaningfully, it seems to me, the researcher will seek out the connection between the many elements in the farm in such a way that he has some idea of how this same set of "attributes" can

[10] See Dewey, *Logic*, Chap. XXI, Induction and Deduction, especially pp. 248–252.

be reconstructed. The investigator will have ideas of the way things are involved together on this farm so that he can direct the way in which other farmers may be able to do likewise. When the analysis has proceeded as far, then this original unique farm combination, this cluster of events, becomes the ground of the construction of a *singular* case which is one of a kind (shall we say efficient, high-labor-income small farmers). But the point is that generalization from this particular case is based upon the possibility of reconstructing the essential relationships for a singular. Consequently the generalization is possible only through the instrumentalities of the hypotheses which directed the analysis, by formulating the "possibilities" by which the "potentialities" of the involvements were analyzed.

The inductive process, then, moves from particulars to generals by the formation of classes, through controlled institution of singulars (to use the logical terminology). But classifications are worked out only with definitions; here the cooperative, or complementary, nature of induction-deduction is clearly evident.

Deduction is a chain argument. In deductive thought there is the development of implications through a series of statements, each of which is related to the other in a logically necessary way. Grant the initial proposition and you are forced to accept the others, simply because all are implicit in the first.

The function of deduction in the process of generalization is to develop the implications of certain relations. More specifically a chain of reasoning develops a series of propositions, a theory; this theory is an inclusive set of definitions used in the investigation. These definitions work out in rigorous fashion the interrelation of characters. For example, in "a perfect market . . . all the buyers and sellers in it have perfect knowledge of demand, supply, and prices and act rationally upon that knowledge."[11] These characters of a perfect market are so interrelated that all must be embraced within one general conception. Each is implied in the other. The binding together by implicatory reasoning of such concepts as the market, supply, and consumption into a logically consistent system is economic theory. The deductive function in generalization elaborates an appropriate possible set of definitions, which set is gradually whittled down by trial—gradually reduced to the one best definition for the investigation of that time and place.

[11] Shepherd, Geoffrey S., *Agricultural Price Analysis*. Collegiate Press, 1941, p. 31.

(*a*) *Classifications—definitions.* Classifications of relations into mutually exclusive classes are possible only on the basis of complete definitions. The aim of an exhaustive classification, on a given relation, or set of relations, is to classify the (existential) events into mutually exclusive classes—with all of the cases included; the classes total 100% of the universe. Essentially these classes are additive. But such inclusive-exclusive classes, based on characteristics, can be formed only on the basis of definitions in which the relevant characters are worked together by discourse in such a way that the essential interlockings are clearly defined. The definition or system of definitions points to a conjunction of traits. If the particular instance fails to qualify on *all* of the specified traits it is not placed in this class. The *characteristics* are classified according to the way the *characters* are related in the definition.

(*β*) *Generalization through judgment.*

Scientific inquiry has for its purpose the increase of knowledge or enlargement of the domain of fact. Upon this there is general agreement. But one crucial feature of this process has not been generally recognized by economists, I believe; namely, that the actual finding of fact involves a judgment, which judgment has parts which can be analyzed according to their function. One of the central theses of this paper is that this judgment function needs to be analyzed as a part of the methodology of economics.

In "pure" economic theory there are no judgments, just an interminable series of propositions, a system of implicatory relations. At this limit of "purity," however, economic theory becomes one with mathematics. Since economic theory must have some "economic" content (to be discussed later), we find that theorizing in economics always takes a direction according to the purpose of the investigation. The "purpose," in terms of methodology, is actualized through judgment.

The kernel of the idea is simply this: that all judgments when cast in the form of a syllogism have a theoretical major premise and a factual minor premise.[12] Functionally, then, theory operates through judgment as the major premise; it is here that theory is tested—when tried in the crucible of judgment.

[12] See *Logic*, for example, Chap. VII, and Chap. XIII. The exposition here follows the general conception by Dewey but is stated rather loosely to convey the general idea without careful attention to the nice distinctions of technical logical analysis.

I have used the term judgment and the syllogism as synonymous: this requires some explanation.[13] Technically speaking the judgment takes the form of subject and predicate. Through judgment we predicate something of the subject. The subject is a factual something—which marks off some part, some potential, of a situation; the predicate is an idea which states (implicitly) some plan of action for realizing possibilities. The statement of ideas (theory) elaborates the possibilities of action; the assertions of fact state the potentialities of a situation. A judgment brings the possible and the potential into consonance through narrowing down the range of the possible to that which can be conjoined with the available potential.

It is therefore through the "predication" process that the area of knowledge is expanded. A subject whose known *potential* has been expanded by fusion with a wider range of the *possible* actually increases in potentiality. It follows too that it is only through the use of theory that the actual field of knowledge is expanded. We whittle away at the unknown first through exploring the possibilities through speculative reasoning and then occupy the territory through enlarging the known potential by the expansion of the coverage of existential propositions—statements of fact.[14]

The subject of a judgment is not just any statement of fact. Out of the total situation those facts are selected which are relevant to the problem at hand. Similarly propositions of theory are not moved like counters into the predicate function. Instead the major conception which gives most promise of being relevant as an "explanation" or "solution" is taken as the initial point of the chain of discourse. "Does the elasticity of demand have any bearing on the possibilities of production control?" Or, "Does the willingness with which people join organized activity influence the functioning of an organization?" From such general conceptions as "elasticity of demand" or "willing participation" the investigator elaborates a series of propositions toward the relevant problem. This is, of course, an extremely difficult task.

[13] "The syllogism is the form of the conjugate connection of the factual and conceptual subject-matters of judgment, stated in such a way as to indicate the conceptual and observational conditions to be fulfilled if judgment is to be adequately grounded. Interpreted in this way, the 'utility' of the syllogistic form resides in the fact that it serves as a check in the case of specific judgments, holding up the logical conditions to be satisfied." Dewey, *Logic*, p. 327.

[14] In these remarks I am limiting the illustrative reference to scientific judgments; formally all judgments are similar but I defer comment on practical judgments until later.

Technically, it may be that all that is required is the elaboration of concepts into a complete idea—complete enough to "explain" the problem. An idea is not just a word, or a copy of some "thing" as Locke thought. An idea is a plan of action. "Ideas are anticipated consequences (forecasts) of what will happen when certain operations are executed under and with respect to observed conditions."[15] Therefore the conception is not really an idea until it is elaborated into a procedural means.

Through the continual testing and trying, by sifting the factual evidence to find the relevant, by arguing back and forth through a system of conceptions, the factual and the ideal, the subject and the predicate are brought into correspondence with each other. "There must be some one *question* to which both the subject 'this' and the predicate are relevant."[16]

Generalization, then, is not grounded in the nature of things, but in mode of response to the investigator. Professor Dewey stated the essence of the problem of generalization in a powerfully simple way. "We are brought to the conclusion that it is the modes of *active response* which are the ground of generality of logical form, not the existential immediate qualities of that which is responded to."[17]

Thus far, we have attempted to work through the theory of scientific inference and generalization in economics by analyzing the nature and function of propositions and judgments. It is now proposed in the remainder of the essay to carry the argument into the consideration of three fundamental issues in economic research: the nature and function of economic theory in inquiry; the distinction between pure and applied economics; and the problem of classification in statistical analysis. Obviously each of these vast topics must be treated with utmost brevity; however, it may be possible to indicate briefly the way in which the basic issues are related to the theory of inquiry under consideration.

The Logical Function and Status of Economic Theory

Everyone seems to agree that economic theory is a logically consistent body of propositions. Theory is expanded or developed by rigorous attention to implication. The implications of rigorously

[15] Dewey, *Logic*, p. 109.
[16] Dewey, *Logic*, p. 126.
[17] Dewey, *Logic*, p. 252.

formulated insights are elaborated into a system of conceptions by deductive reasoning. Furthermore, theory is developed in blocks which may be integrated into a unified body of argument by developing common major premises from which the various propositions are deducible as implications. The fundamental major premises are postulates, which are chosen on the basis of adequacy of function in giving unity, power and direction to the theory.

It is also quite generally agreed that no one can be a really top-flight economist without having thoroughly mastered the theory which is relevant to his field of work. But when one inquires just what relevance means, he will find much less agreement. Indeed one can scarcely maintain that there is any substantial agreement on the fundamental reasons of *why* and *how* economic theory is relevant to either research or practical action. I do not propose to make any survey or evaluation of the reasons given or acted upon by economists in this context. Instead, I shall attempt to state the argument for the logical function of economic theory within the general conception of inquiry hypothesized in this essay.

It seems clear that economic theory has its primary function in assisting economists to think clearly and accurately; i.e. the basic function of theory is methodological. This is explained, according to the general hypothesis of this paper, by the double fact that (1) economic theory provides the major premise, the ideal content, of scientific economic judgments, and (2) theory is the method of exploring possibilities (the logical function of predication).

Within this logical conception, economic theory is recognized as being a body of abstract propositions, propositions which function in inquiry as abstract universals in judgment; that is, as providing the categories which determine what factual material can serve as evidence in inquiry.

It will be recognized that economic theory in this sense is not equivalent to general economics. General economics contains different kinds of generalizations which have differing relations to inquiry. Furthermore, when one examines the question of "pure vs. applied" economics, as we do in the following section, it becomes clear that a proposition may function, in identical word form, either as an idea or as a fact depending upon the context and purpose of judgment. However, there are very cogent arguments for the position that only by the analysis of the logical function and status of economic theory can one clear up the current confusion about theory.

It seems clear, on logical grounds, that economic theory does not describe facts or "reality." Theory is a necessary part of the method of describing or classifying facts but it functions as a system of definitions which provides the logical foundation for classification. Theory *prescribes* what is relevant rather than *describes* what is present. The hard facts of the matter are that since the time of Darwin, natural categories are intellectually inadmissible; Darwin pulled the stakes for all humanity and we must henceforth recognize that the world is a process without fixed entities and natural classes. It follows therefore that the only way in which reliable classes can be formed is through the systems of theoretical reasoning by which the categories of thought serve as the bridge between our purposes and the universe as experienced. In this way the classified facts function as evidence. It follows also that one's system of economic ideas determines what is economics to a person, through the selection of evidence. As Boulding has remarked, "The first task of economic analysis . . . is to select from economic events and facts those elements which are significant in relation to the general scheme of economic analysis itself."[18]

In a general way, then, economic theory is simply the system of ideas which economists have derived as a part of the efforts to understand the economic problems of mankind. The content of the system of ideas varies therefore according to what economists consider to be the economic problem: the production of wealth, the business of life, the making of a living or getting rich, the maximization of the utilization of scarce means, etc. But the common ground of all these interpretations (and despite their differences they have much in common) is what we may call the "meaning" of the economy to economists. The general definition of economic theory, therefore, would seem to be about this: "Economic theory is a carefully reasoned statement of the meaning to economists of (that part of) the economic system investigated."

The conception of economic theory as a specialized system of meanings permits the placing of the theoretical concepts of economics in the more comprehensive system of meanings. The meanings of economic efficiency, private enterprise, individual initiative, and collective economic action are surely an integral part of some conceivable comprehensive system of meanings of the American way of life, for example. Similarly, the conceptions of efficient pro-

[18] Kenneth Boulding, *Economic Analysis*. New York, Harpers, 1941, p. 6.

duction, private property and economic freedom, for example, are an integral part of some conceivable system of meanings by which an independent farmer guides his career.

I do not see that economists have much choice in the matter of how theory functions in thought. If one is to think accurately and scientifically about any point, one must have the control that can come only from an elaborated system of guiding conceptions. If one doesn't acquire these systematically he just "picks them up about the place," as we say in common speech.

Pure and Applied Economics: Or Scientific and Practical Judgments

We turn now to a cluster of issues in economics which are so involved and difficult that any frank discussion of them must be experimental. But the need is urgent and we shall hazard a few comments in the hope that the implications of the previous argument may yield some insight here. Not the least of the difficulties in dealing with "applied economics" or "practical judgments" in economic affairs is that basic issues of valuation are ineradicably involved herein.

I am driven to the conclusion that the distinction between "pure and applied" economics, like that between "pure and applied" science generally, must be abandoned as a general principle. The distinctions made are usually important, but at bottom they confuse the issues.

To accept the distinction between "pure" and "applied" economics as generally valid and fundamental is not only to accept the view that "theory" in its pure form can have an independent career but that it can be validated in some way other than by "application." Furthermore, to accept this distinction as fundamentally valid is to accept the view that the "application" of theory can actually define or demarcate the real practical problems and serve as the source for practical wisdom. To recur to the argument of the earlier part of this essay, the only alternative to some sort of "practical" test of validity in inquiry is the resort to "self-evidence" or revelation.

I do not see how anyone can deny even for physical science research, that the overruling purposes which give the general direction to investigation are rooted in the general needs or problems of the society which supports (or even permits) these inquiries. This

is more obviously true for social science inquiries since the evaluation issues are so much more intrinsic to inquiry itself.

Yet there are fundamental differences here which need to be honored. An alternative formulation, and one which is believed to be consistent with the general thesis of this essay, is to distinguish scientific from practical judgments. Here the distinction turns on content rather than method.

Scientific inquiry has for its purpose the discovery of fact; by rigorous methods of inquiry we gradually discover the underlying connections of things upon which occurrences are dependent. Furthermore, scientific procedures are designed so as to be a part of a continuum of inquiry. A crucial part of this method is the recurrent and repeated formulation of judgments. Scientists hazard judgments for example, that a specific vitamin affects the functioning of an organism in a specified way; or that the savings function operates in some specified way in capital formation; or that diversification of enterprises will increase labor income. Are the judgments correct, or correct enough to be acted upon with reasonable safety? Well, we have to see "how things work out" when we act upon the assumption that they are correct.

There is a vast difference between these scientific inquiries and the practical judgments found in such diverse acts as everyday choices of living or the grand strategy of public policy. These practical judgments have as their purpose the use and enjoyment of things. They are concerned with the way the potentialities of existence are made to serve mankind.

I doubt whether there is another issue of equally grave importance confronting agricultural economists in America, as the distinction between scientific and practical inquiry. Let no one doubt that fundamental scientific inquiry into the economic problems of agriculture is the foremost task of agricultural economists. However, the problem-solving approach to inquiry, which is built into the very structure of agricultural colleges, easily and naturally frays out into a mere servicing of practical judgments. In fact, it requires strenuous intellectual effort to avoid this very outcome. Under such circumstances we gradually drift into an acceptance of the "problems" as formulated by our consistency. The next step is simply that of making "investigators" the mere tools of various interests. All this may be a very pleasant and even an exhilarating experience for awhile, but from a professional viewpoint

it leads to the "consumption of our seed corn" if we may use a good homely phrase.

Yet the issue must be faced. The argument seems inexorable, that there is no other alternative in genuinely scientific inquiry to having both the roots of inquiry and the final tests of validity in practical problem solving. The argument seems to lead us to this point: that the validity of scientific judgments is ultimately established through the "improvement" which such judgments can make in practical judgments. This follows from the admission (1) that the judgments are the critical acts in the utilization of scientific findings; and (2) that the ultimate validity of scientific findings is to be established by practical use.[19]

The acceptance of such a viewpoint leads to some novel and difficult problems in economic analysis. Among agricultural economists, or any other group of economists who have a field of specialization, (which includes virtually every one of them) distinctions between scientific and practical are made as a matter of daily work. But there is a strong probability, I conclude, that our efforts are being frustrated and our work reduced in quality because we are intellectually confused on these basic issues of pure or applied; or scientific or practical.

As a suggestion on how we might resolve the issues, we should recognize, first, I believe, that practical judgments have essentially the same form as scientific judgments; namely, that the major premise is theoretical or ideal, the minor premise factual. The facts of a practical judgment, when put in propositional form, are statements of the way things are involved together in the opportunities and obstacles which are relevant to the course of action proposed.

The generalized formulation of these facts, of the way existences are involved together, is the task of scientific inquiry. The facts established by genuinely scientific inquiry are also the general facts of the case for a practical judgment in a specific situation.

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[19] The statement of the argument of this section of the essay is made in terms of the relation between scientific and practical judgments in order to bring into sharp focus the operational character of, and fundamental similarities between, all kinds of inquiry. It is implicit in the argument, however, that scientific and practical judgments are related to each other through the reciprocal utilization of the products of each. Scientific judgments produce generalizations; these generalizations are the general and basic ingredients of practical judgments; but reciprocally the validity of the propositional generalizations of scientific judgments is tested by the effectiveness with which they can be used to improve practical judgments—which judgments are directed to the development, use and enjoyment of resources.

A more particular investigation can discover the facts peculiar to the particular practical judgment.

The unsolved or neglected problem in this area of economic analysis is the investigation of the ideal content, the theoretical principle, which forms the major premise of practical judgments.[20] Surely the ideas which guide conduct in practical economic affairs and policy can be the subject of investigation. And their discovery and formulation are both an essential part of economic investigation and the bridge, as I see it, between scientific and practical judgments in economics. To be sure there is the question of to what extent practical judgments, including policy decisions, are economic in focus and content. But even this point seems covered by the present proposal: if the problem embraces many different aspects, then both the relevant ideas and facts will be diverse and complex. The ideas will have to be integrated and the sets of facts carefully coordinated to provide a basis for dependable judgment and action. But the contribution of economic analysis to the judgments is still of two sorts: (1) the ideas, philosophies or principles which operate in the major premises of judgment (or the predication of reliable possibilities) and (2) the economic facts which form a part of the minor premise (or subject) of judgment.

It may be obvious that such a possible treatment of principles, or ideas as major premises, faces the valuation problem in two different ways: (1) by formulating the ideas which guide action we open up the possibility of allowing for a plurality of values; and (2) it suggests that ideas as plans of action are the genuine objects of valuation.

Viewing the whole matter in logical terms, then, we seem to have three different kinds of generalizations in economics, even though on logical grounds there are but two kinds:

(1) the generalizations of economic theory
(2) the principles of conduct in economic affairs
(3) the generalizations of economic fact.

In terms of logic, the generalizations of economic theory always appear to function in economic inquiry as abstract hypothetical universal propositions. The generalizations of the facts about the way

[20] It is the systematic formulation of the ideas which guide practical action which I understand Allin to mean by *practical theory*, in his stimulating essay, "Theory, Definition and Purpose," in the August 1949 number of this Journal.

existences are involved together are generic propositions.[21] The generalizations of principles of conduct are investigated (and investigatable) as facts in scientific inquiry but function as abstract propositions in practical judgment.

Unless I am badly mistaken the ideas as plans of action or principles of conduct have not been investigated and cannot be investigated under guidance of equilibrium economics. Formally the issues are met in the purely theoretical formulation by assuming rationality of economic behavior and efficiency as the sole value. Practically under this conception of economics we damn people for being so foolish as to be irrational and say in effect that if genuine valuations can be investigated, at least it is beyond our field.

Any investigation which is guided by rigorous adherence to a mechanical equilibrium theory will, as a matter of course, find only quantitative facts. The "quantities" will be facts of course, but they will be facts which for the most part when related to action will describe or measure the obstacles to action, the resistances to be overcome; the material to be handled, etc. In our careful statements on matters of policy or action we speak about the "effects" of policies, institutions, and activities upon the described system of prices and production. No one who has given any thought to the matter would deny that these are facts of inestimable value. But the actual courses of action are beyond the pale of such investigations.

The suggestion of this essay is that if we are actually to implement and improve practical judgments the ideas at work in such judgments must also be investigated. Nor is this a wholly novel suggestion. Agricultural economists, for example, have had much experience in such investigations. There is, I believe, a great opportunity to improve these investigations; and on the negative

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[21] In terms of content, the range of generalizations of fact would depend upon one's conception of economics. As I read the record, the generalizations of economic fact which have been produced under the guidance of modern equilibrium theory, have come to be considered almost exclusively as facts about the operation of the economy. This seems to me to impose a most unfortunate limitation upon systematic economic analysis in an age when the whole fabric of the social and economic organization of the world is being transformed by negotiation, diplomacy, revolution, taxation and public spending. The generalizations of economic fact, then, need to be viewed as including generalizations about the economy as an organization of human relationships as well as generalizations about the input-output, cash income and price relations, etc. in the operation of the economy. Nevertheless the logical status of such generalizations would be identical, namely generic generalizations about the way actual existences are involved together.

side, the pressure of "modern" theory has tended to rule such investigations out of scientific work.

The raw materials for investigating conduct are everywhere about us wherever people act volitionally. In farm management this means the analysis of "practices"—where practices are what people do regularly in operating farms. It is the practices, as acts, that put a concern together and keep it together. The principles of conduct are simply the "meanings" of these practices generalized into some "ideal" of practice.[22] Similarly in all sorts of collective action, the working rules of the organization are the "ideals" derived from the critical analysis of practices. In such cases the "rules" are the principles of joint conduct, which are at once rules for settling disputes and an expression of the purposes of the organization. If one analyzes "conduct" in public policy for the purpose of discovering principles, he would likewise study the practices of statesmen, politicians, administrators, etc. The common ground of all these "principles" is evidently the conception of ideas at work, with ideas conceived of as plans of action taking into account the accessible alternatives among the opportunities and obstacles of such situations.

Here also is the crux of the value problem in economic behavior. Evaluation is inescapably a function of practical judgment. And it is evidently in the guiding ideas in such judgments that the principles of value are explicitly formulated. That is to say, generally speaking, the analysis of valuation must center on conduct and not on values as discrete things. In individual conduct we evidently should appraise alternative ways of doing and living in terms of the consequences for general well being of the individual. In social affairs the analysis of valuation would center upon the rules by which persons work, live, and play together. These rules would be appraised in terms of the effectiveness with which they promoted, say, peaceful, orderly and creative living, and efficient production.

[22] I do not want to suggest that the derivation of these meanings is altogether a simple affair. In my own experience I have found any such effort to be both difficult and baffling. In our study, *Keeping the Farm in the Family*, Parsons and Waples, Wis. Exp. Sta. Res. Bul. 157, 1945, we attempted to analyze meanings as guiding principles in transference of farms from one generation to the next. At about the same time John F. Timmons working on a study of inheritance in his Ph.D. dissertation formulated the strategic relationships in the devolution of property as "purpose-practice-consequence." He was attempting to formulate something like principles of conduct in the general field of inheritance. See Johns F. Timmons, *Social and Economic Aspects of the Devolution of Agricultural Land Through Descent, Will, and Gift (A Study of Agricultural Land Inheritance)*," Library, University of Wisconsin, 1945.

But methodologically the point is that these principles would be analyzed scientifically as principles of conduct, and acted upon practically as the major premises of judgment of conduct.

Such interrelations of scientific and practical judgments as indicated raise many questions about the function of economists in practical affairs. It is doubtful whether we are far enough advanced in our scientific work to warrant a complete separation of function. Perhaps economic affairs may always be so complicated that the truly scientific investigator must also assume intermittently the responsibilities of practical administration and judgments. At any rate every investigator in economics even to be scientific—according to the argument of this essay—must somehow think and work his way through to some possible validation of his inquiries in the practical judgments of policy and conduct. There appears to be no other way to avoid mere dallying with make-believe problem solving.

I should like, however, to call attention to the fact that this particular formulation carries with it implications of very profound change in the orientation of our thinking about both economic theory and policy. So far as I know these particular suggestions are new in their reference to economic analysis. This should in itself serve as adequate warning about the possibilities of error in them. But having mentioned the possible dangers, I want to affirm the possibly great advances in thought which such distinctions may hold.

The issues at bottom are nothing less than the question of whether and how valuations may be investigated. The present argument contends that they can be investigated and suggests that the source of evidence is in the practices, the actual performance of persons in the relevant situational contexts.

Furthermore the view that economic theory is simply a part of our methodology would cut the heart right out of the use of economic models as criteria of public policy. (This does not touch the question of the use of models as instruments of investigation.) One of the important implications of this distinction between scientific and practical judgments is that public policy proposals must be formulated as possible ideal guides to practical judgments about policy matters. The prevalent practice among orthodox-minded economists of setting up some model of perfect resource use and then assuming that this is the proper criterion of policy would

have to be abandoned—as a method of getting policy criteria. Judgments of public policy like any and all other practical judgments must be formulated with reference to possible courses of action within available alternatives under the circumstances of the situation. According to the view of this essay it is a part of the task of scientific inquiry actually to analyze and formulate the problems of public policy. Problem-solving is essentially the removal of the troublesome factors in a situation which are the source of the confusion, difficulty, insecurity, etc. Problem-solving removes the blocks which obstruct orderly and satisfying activity. When problem-solving and evaluation are formulated as a part of the functioning of practical judgments, it is obvious that a profound break is implied with the present practice of setting up perfect models as criteria which are arbitrarily assumed to be relevant standards of judgment in the situations. In the latter view, the problem becomes the discrepancy between the actual situation and the assumed ideal. The "solution" then turns out to be some project which would bend "reality" to conform to the model.

The relationship between scientific and practical judgments represents essentially the division of function between research and extension in the Land Grant College system. This function should be one of reciprocal complementation. Such a relationship would seem to be the natural outcome of viewing scientific economic research according to the thesis of this essay. If the task of scientific economic research is conceived of as the discovery of the ideas and facts which are relevant to, and effective in, practical judgments, then there can be neither complete separation of research and extension nor any possible conflict between these functions. The research investigator is interested in these ideas as guides to action and the relevant facts as a matter of truth discovery; and the research cannot, on scientific grounds, be said to be completed, as fundamental research, until the conjoint functioning of these guiding principles and relevant facts are understood in their mutual interrelations. The extension worker is interested in the same findings, but he uses them to suggest improvements in the practical decisions of farmers for converting resources into uses and enjoyment.

The Problem of Classification in Statistics

The classification of data is one of the key points in statistical analysis; it is through systematic classification that the vast masses

of material are reduced to forms in which they can be compared, analyzed and even comprehended. The question, therefore, of just how classes are defined is a strategic problem in the whole theory and process of inquiry.

The most common answer of statisticians to this question, judged by recognized textbooks in the field is that the data are classified by characteristics or attributes.[23] But if one inquires, "Which characteristics and why?" the explanations are not very illuminating; however Bowley[24] at least, does work out the argument in a way which permits an approximate joining of the issues with those of logical theory. But the main point here is not to try to comment on the adequacy of statistical treatises, but rather to indicate the way in which the problem of classification in statistics fits into the larger continuum of inquiry.

More specifically, the need is to see how statistical analysis fits into or extends the general processes of induction-deduction in inquiry. The inductive process consists in establishing general propositions which classify particular instances of fact. These general classifications are defined through the speculative-deductive reasoning which defines the possible relations of characters in the form of hypotheses. This array of hypotheses is gradually narrowed down to the one definition which is most productive in directing generalization—from particular instances through the formation of "singulars" which become, in turn, instances of the general classes.

In simplest terms, there are two requirements of this inductive-deductive process which need to be noted here. (1) The classes used in classifying facts are those established within the inquiry itself. The classes are not "in the facts"; the classes are a part of the purpose and procedure of inquiry. Even though we classify things by their characteristics, the characteristics used are those which have been tentatively established as "meaningful signs" or as "traits" significant for the inquiry. (2) This requirement gives the statistical "classes" the logical status of the generic propositions, with the definitions by which they are distinguished derived from the relevant systems of theory. In economic investigation this is economic

[23] For example, Chaddock R. R., *Principles and Methods of Statistics*. Houghton Mifflin, 1925, Chap. IV, or Yule, G. Udney, *An Introduction to the Theory of Statistics*, Charles Griffin, London, 1929, Part I. The Theory of Attributes.

[24] Arthur L. Bowley, *Elements of Statistics*, King & Son, London, 1937.

theory in the broad sense of the term, ideally a system of hypothetical universal propositions.

Economic theory functions in investigations, then, as a general system of definitions which directs the formation of classes. Precisely how this is done is a very subtle and complex affair. It is evident that theory is the method of exploring possibilities. It is also generally agreed that the formation of hypotheses is an essential part of investigation. These hypotheses are tentative "explanations" which are gradually whittled away by investigation to the "best" explanation under the circumstances. Ideally, the contest of hypotheses is a matter of "survival of the fittest" explanation.

It is fairly easy to conceive of an hypothesis as a possible explanation. But in any field of inquiry worthy of professional standing, "ad hoc" hypotheses have a very tentative status. Not until the hypothesis is made an integral part of the general theory can the hypothesis be viewed as genuinely acceptable. This is of course a two-way adjustment; a new hypothesis may have such demonstrable validity that it forces a reconstruction of a large part of previously accepted theory.

As long as the hypothesis is in serious doubt the relevant classification of fact is likewise a matter of question. Consequently both the best hypotheses and prospectively fruitful classifications of fact must be worked out in some sort of pilot studies. Perhaps this relationship can be made explicit by brief attention to the problem of sampling in relation to the formation of classes. All investigators are agreed that some sort of "sampling" is an essential part of social and economic research. However, there is evidently a genuine problem of the relation of the sample to the formation of classes which requires explicit formulation.

The purpose of a representative sample, as it is generally conceived, is to draw out or select sufficient cases so that the "characteristics" of the sample represent adequately the characteristics of the parent universe from which the sample is drawn. The essence of the whole procedure is simply this: how do we go about getting a reliable estimate of the universe from which, in turn, reliable inferences of fact may be drawn—without undertaking to analyze a complete enumeration (even where this is imaginable).

But this procedure would appear to assume that the sampler knows what characteristics are relevant to the inquiry and how they might be classified when found. Unless one assumes that the charac-

teristics themselves are the basis of classification—just in and of themselves, as natural (ontological) classes in the Aristotelian sense —then the drawing of and attempting to analyze a representative sample (in the above defined sense) runs the risk of being both haphazard and expensive. In the determination of relevance, an investigator would almost surely find that he had a vast amount of irrelevant and unusable material in such a "random" sample taken as a first step in inquiry. This would seem to be especially true for social affairs, where each observation combines many interrelated characteristics.

It seems necessary to draw a different kind of a "representative" sample at an earlier stage in the analysis, before the comprehensive representative sample (in the usual sense) is drawn. Possibly enough may be known from previous investigations to make the first sample unnecessary—but the function remains.

What is required from the first sample is that it shall represent, not the *distribution* of characteristics in the universe, but the *full range* of *possible combinations* of characteristics. The first questions are, how are the characteristics related to each other and of what are they traits? It is conceivable that one single case might embrace the full range of combinations of characteristics—but since this is unlikely the number of instances would have to be drawn from various situations and examined until further examination held the promise of no further new combinations. Nor would this be just a blind affair; the scope of the inquiry itself would suggest the range. Essentially this stage of the inquiry is that of the "case method"—whether the case be a farm, a family, a career of a farmer, a market, a cooperative or a business cycle. The point is that analysis at this stage is concerned with the pattern and significance of characteristics, not the frequency of their occurrence.

This makes a distinction between induction and the determination of frequencies within classes. The inductive process is fundamentally the understanding of how to place a particular case in a general class through the possible reconstitution of a representative singular case as an instance of this general class. In effect then the inductive process is actually completed with the formation of the classes. The frequency with which particulars occur is an additional and independent question.[25] It appears that the two steps

[25] It was the interest in induction, in the problem of the formation of classes which I take to be the ground of the late Leonard Salter's interest in the "case-

cannot be taken simultaneously. The aim of the "representative" sample in the usual sense of the term seems to me to be directed to the questions of frequencies rather than of induction in the accurate sense of the term.

The logical requirements of classification explain the difficulties of and the increasing concern for the handling of basic economic data—the census and in agriculture, the many collections of data by the crop and livestock reporting service. The general problems here are recognized, of course, by the workers in these various fields; but the explicit attention to them here will indicate the relationships of data classification to the larger continuum of inquiry. We are in this predicament: that the data collected by these various agencies are basic to countless analyses yet the very collection and tabulation of these data must take into account the function of the data in ultimate administration and investigation. It is axiomatic and inherent in the nature of facts, that the questions to be answered by analysis must be implicit in the questions asked of experience (or events) in collecting the data. On logical grounds alone, this makes the collection of data not only an integral part of the research (and administrative) process, but one of the most difficult. On theoretical grounds, we need not only to anticipate the many possible uses in research; these uses need to be so thoroughly comprehended that we know which general facts will be relevant in the various research and administrative contexts. Only the most general facts of the many conceivable "general" situations can be secured by the basic data collection agencies. At one time, no doubt, common sense classifications were sufficient to this need, henceforth it would seem that this field of endeavor requires the most intense efforts in the interpretation of research procedures. In short, the data if genuinely useful, must be classified according to criteria developed in the very processes of inquiry and administration.

The function of statistical analysis in research is essentially that of reducing all explanations other than the one finally accepted to an absurdity. It is through speculation that the possibilities of all sorts, including possible theoretical concepts, are formulated. It is the social task of statistical analysis to eliminate most of these

grouping" method of classification: this Journal, Nov. 1942, Vol. 24, No. 4. Also his thesis, "A Critical Review of Research in Land Economics," Univ. Minn. Press, 1948. Salter had an almost passionate disbelief in the method of classification by the simple procedure of "looking for uniformities" in the data. And in this belief he was profoundly wise.

possible explanations without conducting wholesale public experiments to try them out.

This in turn is the ultimate justification of free intellectual inquiry in society; it is through free inquiry that the countless alternatives of society are formulated; it is only through the most hard-headed and systematic analysis that the full range of imaginable alternatives can be narrowed down to a statement of the reasonable alternatives under the existing circumstances.

INPUT-OUTPUT RELATIONSHIPS IN EGG PRODUCTION[1]

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Introduction

BECAUSE of their importance in the maximum utilization of feeds and concentrates, relationships between feed inputs and livestock production have been the subject of many research studies. In the case of meat production it was early demonstrated that the input-output function follows that of the principle of diminishing increment.[2]

Theoretically a similar relationship might be expected in the production of eggs. Less is known, however, about input-output relationships in egg production than in the production of milk, beef and pork. Little information is available regarding the response in egg production obtained from different levels of feeding, although it would appear that experimental work with chickens would be relatively simple as compared with larger animals. This paper attempts to examine available information and to explore this relationship in somewhat greater detail than has previously been done.

The feed consumed by chickens consists almost entirely of grain and high-protein concentrates. It is estimated that of the total livestock consumption of grain and concentrates in the United States, poultry receive more than a fifth, dairy cattle use almost as much, and hogs consume more than a third. The remainder is used for fattening of cattle and for other livestock.[3] Of the total grain and concentrates consumed by poultry it is estimated that a little less than three-fourths is used by chickens kept for eggs. This is a substantial quantity and in 1948 it amounted to nearly 16 million tons.

[1] The writer wishes to acknowledge the suggestions received from Ronald L. Mighell, John W. Klein, BAE, H. R. Bird, BAI, and other co-workers in the U.S.D.A. The work represented by this article was supported in part by the Bankhead-Jones Special Research Fund.

[2] Spillman, W. J. "Law of Diminishing Increment in the Fattening of Steers and Hogs," this Journal, April 1924, and *The Law of Diminishing Returns* by W. J. Spillman and Emil Lang, World Book Company, Chicago 1924.

[3] Jennings, R. D., "Consumption of Feed by Livestock," Circular 836. (In Press)

Input-Output Relationships in Livestock Production

The feed-production relationships for livestock at various levels of feeding are known only in their broadest aspects. Experiments conducted in this field by natural scientists in the State Agricultural Experiment Stations and in the United States Department of Agriculture have in most cases been designed to determine the more desirable feeding standards and rations. These experiments have been concerned with the more immediate problem of obtaining increased production, rather than with the less pressing problem of determining the extent to which production varies with different levels of feeding. Only recently has it been recognized that the relationship between feed intake and production for milk is enough different from feeding standards to justify further research.

Several important feed-production relationships should be mentioned briefly in order to indicate more clearly the particular relationship we are concerned about here. One of these feed-production relationships is that found in production of meat from growing animals. The diminishing returns relationship is of economic significance here because the relative prices of feed and meat animals of various grades determine the point on the curve to which it pays to feed.

Feeding standards such as those recommended for use in feeding milk cows and laying hens are ratios of feed to production. The higher the production the larger is the quantity fed. Because of variation in capacity, different cows and laying hens consume different quantities of feed when fed to produce maximum output. Such data are sometimes erroneously used to construct input-output relationships, although the variation found in feed intake is a result simply of differences in inherent capacity to produce.

Another type of feed-production relationship is that obtained by feeding animals of the same inherent productivity at different levels in order to determine the input-output relationship. This is the type of relationship which needs to be investigated in production of eggs. In the production of milk this relationship was determined in a special research project undertaken by the United States Department of Agriculture in cooperation with 10 State agricultural experiment stations. A report was issued in 1942.[4] It was

[4] Jensen, Einar, Klein, John W., Rauchenstein, Emil, Woodward, T. E. and Smith, R. H., "Input-Output Relationships in Milk Production," U.S.D.A. Tech. Bul. No. 815, May 1942.

found that as production of milk is increased by heavier feeding there is a smaller increase in output for each additional unit of feed used than feeding standards would have indicated. The law of diminishing physical increments was also found to apply.

Input-Output Relationships in Egg Production

Many feeding experiments with chickens have been conducted for the purpose of determining what the effect would be on egg production or on the health of the chickens, if one or more of the necessary nutrients were increased or eliminated or fed in quantities considered inadequate to provide normal requirements. This specialized type of input-output feeding experiment is extremely useful in testing the economic importance and need for different nutrients, but it has limited value for an economic appraisal of general input-output relationships for different levels of feeding. Another type of data on feed consumption and egg production is that available from egg laying contests. In these contests the birds are fed all they will eat of a balanced ration in order to determine the productive capacity of different strains of layers. The relationships of feed to production of eggs obtained in these contests are like those obtained for milk cows in establishing milk or butterfat records. Such data would be expected to show a straight line relationship between feed intake and production in the absence of any reason for assuming that higher capacity birds would make more or less efficient use of the production ration.[5]

In a study in Utah an attempt was made by Wells and Clawson to use data as to feed consumption and egg production from farm flocks to measure the feed-production relationships.[6] The data were obtained from commercial egg-producing Leghorn flocks and, so far as could be judged at the time the average productive efficiencies and capacities of the various flocks were thought to be approximately equal. The data came from well-managed flocks in which the layers apparently were fed as much as they would eat. However, they were probably not fed equally well-balanced rations. The variation in the relationship between feed intake and production may therefore have been chiefly a result of variations from farm to farm in numerous factors. At any rate, as there is no assur-

[5] Brody, S., Funk, E. M. and Kempster, H. L., "Growth and Development." Mo. Agr. Expt. Sta. Research Bul. 278, p. 46.

[6] Wells, O. V. and Clawson, Marion, "A Study of Egg Production per Hen in Central Utah." This Journal, Vol. XV, October 1933, p. 633.

ance of the real differences in the levels at which the layers were fed these data are suitable only for a rough approximation of the relationship of feed to production of eggs under farm conditions. The data are similar in some respects to those obtained in egg-laying contests, except that in laying contests the greater degree of control makes it more certain that a measure of the capacity of the birds to produce eggs has been obtained.[7] Neither the data from egg-laying contests nor those from farm records or surveys appear to lend themselves to an analysis of the nature of the feed-egg input-output relationship. The study presented by Wells and Clawson did not reach a conclusion in this respect, although a recent textbook using this study as a basis implies that a diminishing returns relationship may exist.[8]

The most revealing study available appears to be one undertaken by the United States Department of Agriculture at the Southwest Poultry Experiment Station, Glendale, Arizona, in 1936 and 1937.[9] This experiment was set up for the purpose of determining the effect of limited feeding on egg production rather than to measure the effect of additional feeding. This appears to approach the problem in an inverted fashion and may have influenced the results for our present purpose, as the rations were adjusted primarily to fit the full-feeding level. Nevertheless, this controlled experiment is very suggestive.

The experiment at Glendale consisted of two parts, each covering a period of a year. One part of the experiment began December 24, 1935, and ended December 23, 1936. Another part of the experiment began January 8, 1936, and ended January 6, 1937. The White Leghorn pullets used were divided into groups of 25 each. All were the same strain and as nearly as possible the same weight. In the first part of the experiment three groups of 25 birds each were fed different quantities of an all-mash ration. The first group in this lot was given free access (ad libitum) to the diet and thus got all they would eat. A second group was given only 87.5 percent of that eaten by the first group the previous day and a third group only 75 percent of that quantity. This was repeated with another

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[7] "Maryland Egg Laying Contests." Maryland Agricultural Experiment Station Bul. 359.

[8] Black, J. D., Clawson, Marion, Sayre, C. R. and Wilcox, W. W. "Farm Management," p. 938.

[9] Heywang, Burt W. "The Effect of Restricted Feed Intake on Egg Weight, Egg Production and Body Weight." *Poultry Science*, Jan. 1940, Vol. XIX, No. 1, p. 29.

lot of three groups averaging somewhat less in weight. The results of the first lot of three groups are shown under a, and that of the next lot of three groups under b in the chart (Fig. 1).

In the second part of the experiment eight groups of pullets were used. Three of these groups were used to repeat the experiment explained above, and the results are shown under c in the chart.[10]

A summary of the experiment is presented in Table 1. This shows that a reduction of 12.5 percent in the feed intake cut egg production to 68.2 percent of that obtained when the layers were fed all they would eat. When there was a reduction of 25 percent in the feed intake, production of eggs dropped to 47.5 percent of that for the full-fed level. The relationship found may also be expressed by saying that production of eggs dropped a little more than twice as much as the reduction made in the rate of feeding.

TABLE 1. EFFECT OF REDUCED FEED INTAKE ON EGG PRODUCTION

Level of feeding[a]	Percentage of level 1		Eggs produced		
	Rate of feeding	Eggs per layer[b]	Lot a	Lot b	Lot c
	Percent	*Percent*	*Number*	*Number*	*Number*
1	100	100	193	146	171
2	87.5	68.2	127	101	120
3	75.0	47.5	90	67	85

[a] All groups under level 1 were given all they would eat.
[b] Averages of the three groups fed at the same level.

As shown in Figure 1 by the similarity of the three curves, the results are nearly identical. Differences in the level of production among the three experiments (lots) were apparently caused by the difference in weight of the layers used. The layers in the three groups in lot b averaged considerably smaller than those in the six groups in the other 2 lots.

[10] The other five groups of pullets were fed different quantities of the diet for a part of the period. Approximately half way through the experiment the quantities were changed in order to observe whether this would result in a change in egg production, egg weight, and body weight of layers. Production changed in accordance with feed intake, egg weight remained nearly constant, and average body weight was not significantly affected by restricted feed intake. The most important finding in this part of the experiment is perhaps summed up in the observation that the egg production of layers apparently can be increased again to approximately the full quantity permitted by their capacity when the amount of feed intake is increased even though the feed intake has been as low as 75 percent of what they might have eaten ad libitum. This is quite different from the situation with milk cows where the milk flow once reduced during the lactation period can only rarely be brought up appreciably during that lactation period.

The results indicate a slightly increasing returns relationship as the layers were fed more nearly the full quantity they would eat. The feed-production relationship from the farm survey in Utah is plotted in Figure 1 in order that the slope for these data may be compared with that of the input-output data from Glendale. The relationships between feed and egg production from the Maryland

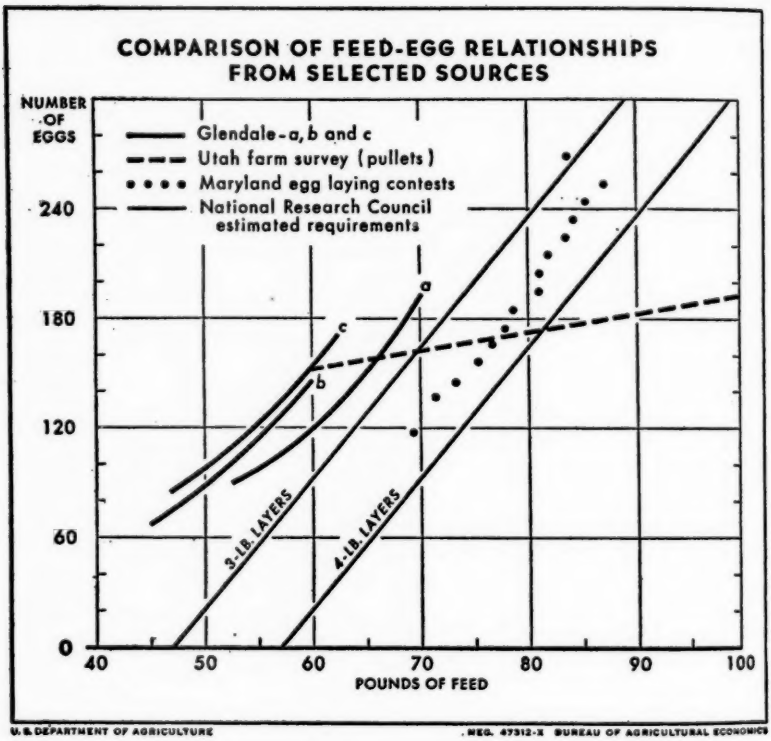

FIG. 1.—The feed-egg relationships from Glendale are based on various levels of feeding for strains of the same productive capacity. Data from egg laying contests and estimated feed requirements from NRC show the feed consumed by layers of various capacities. The Utah survey data probably hold an intermediate position, measuring partly capacities and partly differences in ration and management from farm to farm.

egg-laying contests and from feed requirements published by the National Research Council are shown. There is a surprising similarity in the slope of relationships obtained at Glendale and those shown for the egg-laying contests and the feed requirements where-

as the relationship obtained from the farm survey data is quite different. The marginal efficiency of production on the farms in Utah seems quite low as it takes about 40 pounds of additional feed to increase average production by 50 eggs. A comparison of the data from Glendale with the approximate feed requirements estimated by the National Research Council[11] as represented by the straight lines in the chart indicates that the layers used in the Glendale experiment were relatively efficient producers. This may be due in part to better than average climatic conditions at Glendale, Arizona. Another explanation is that the estimated feed requirements represent average values for both light and heavy breeds and are sufficiently high so that an adequate quantity of nutrients is assured even under unfavorable conditions.

A generous ration is not utilized as efficiently as a less adequate ration. Morrison, for example, states that "a liberal ration is not digested and utilized quite so completely as a scanty ration. For this reason . . . a cow in milk which is fed with the liberality necessary to produce a good yield of milk undoubtedly needs more feed for mere body maintenance than she would if she were fed a scanty ration that would be sufficient to maintain her weight when dry."[12]

According to the results obtained, the strains of White Leghorns used in the Glendale experiment were highly efficient. The groups fed ad libitum (all they would eat) were consuming slightly less than estimated requirements but the groups fed only 87.5 and 75 percent as much were getting considerably less feed than ordinarily would be required by layers of similar weight and production. In the groups which were fed at these reduced rates it must be assumed that the feed was very efficiently utilized. The net result was uneconomical, however, because of the large decrease in production of eggs although the average weight of the layers remained fairly constant.

Conclusions Which May Be Drawn from the Glendale Data

The most significant conclusion which may be drawn from the Glendale experiment is that there is nothing within the range of the data to indicate a decreasing return for additional units of input.

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[11] Cravens, W. W., Almquist, H. J., Norris, L. C., Bethke, R. M., Titus, H. W. *Recommended Nutrient Allowances for Poultry*, A Report of the Committee on Animal Nutrition, National Research Council, Washington, D.C., 1944.

[12] Morrison, F. B., *Feeds and Feeding*, p. 76, Ithaca, New York, 1937.

On the contrary the results seem rather to imply a slightly increasing return relationship.

Two possible explanations appear for the apparent tendency toward increasing returns. The first lies in the nature of the experiment itself, in which the feed intake was reduced by exact percentages from ad libitum feeding. The feed mixture which originally was well balanced for the needs of the layers at full capacity became less well balanced. In other words, when the total feed intake was reduced 12.5 and 25 percent some nutritional factors may have been in greater relative scarcity than others. If this were the case it might explain the increasing returns slope of the curve.

From a theoretical standpoint it would be extremely interesting to learn whether the input-output relationship in egg production reaches a point at which a diminishing output is obtained for each additional unit of input. In the Glendale experiment, for example, it is possible that the use of several more groups of pullets fed, say, 2.5 percent less than the "ad libitum" group and another fed five percent less, a third 7.5 percent less and so forth, might have indicated a point at which production would have increased at a declining rate. Insofar as can be seen it would appear that this point in any case is so near the point of maximum feed intake and production that it probably would not be of practical significance to poultry farmers.

The second possibility is that the capacity of these layers to utilize feed for production of eggs was relatively low. In fact, so low that even at the upper levels of production the relationship between input and output still did not reach into what might be called the economic range. That is consumption of feed did not reach the point on a theoretical curve at which diminishing increments begin.

This hypothesis is mentioned because of its possible application, if true, to future breeding work. If production of eggs as indicated by Brody, et al. may be limited by the capacity of the metabolic system of the layers, future progress in breeding for greater capacity might some day push the input-output relationship into an area of diminishing returns.[13] Meanwhile, the data from the Glendale experiment seem to indicate that the input-output relationship

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[13] Brody, Samuel, Funk, E. M. and Kempster, H. L., *Growth and Development* Mo. Agr. Expt. Sta. Research Bul. 278, p. 30, March 1938.

is not that of diminishing returns up to the point of maximum capacity of the layers used.

Economic Application—Practical Use

In appraising the conclusions from the Glendale experiment one must be careful to distinguish between the findings of the study as applied to conditions such as those set up in the experiment and the wider application to poultry feeding under other conditions. As in the case of any experimental study, the application of results to a wider area is a problem in sampling and inference.

In this case, it is clear from the experimental results that for the conditions studied, feeding the layers all they would take of a well-balanced ration was most profitable. For the three levels studied there was no indication of diminishing marginal returns. Other evidence of a less direct and conclusive nature, also seems to be in agreement. We can say therefore that within the usual range of feeding experience, it is probable that layers fed to capacity will either show no diminishing marginal return increments or if they should, it would be so little as to be of minor consequence.

At the same time it should be pointed out that the experiment was restricted to three levels, that it covered only one strain of Leghorns in one location, and that the ration for each of the three levels was not adjusted in composition. It might well be that changes in those factors or others would result in the appearance of some diminishing marginal relationships. In fact it seems almost certain that in the nature of things, some diminishing marginal relationships would appear in connection with some of these possibilities.

However, let us assume for the moment, that the essentially straight line relationship found is generally applicable and consider what it would mean. First of all, it strongly reinforces the recommendation that has been stressed by poultry extension workers that hens should be fed to their full capacity of a well-balanced ration. For flocks fed for commercial egg production it means that adjustments in feeding to meet changes in economic conditions should be made by adjusting numbers of layers (culling), rather than by changing feeding rates. In this respect feeding for egg production appears to differ from feeding in other types of livestock production. The input-output relationship in feeding milk cows, for example, is definitely one of decreasing increments, so

that adjusting the quantity of feed per cow is one of the most important means of adjusting to changes in milk-feed price relationships. Again in feeding hogs, beef cattle, and poultry for meat production, the diminishing marginal gains from additional feeding of concentrates are so important as to play a very important role in working out the most economic feeding rate. Not so in egg production within the usual ranges of feeding adjustment.

In some respects this means that the egg producer has a simpler feeding problem than producers of other livestock products. The chief problem is that of getting the layers to eat as much as their capacity permits. The work of Brody and his co-workers, referred to earlier, suggests that laying capacity is limited by the hen's ability to assimilate feed. The fundamental reason for the higher relative maintenance ration for the hen as compared with the milk cow lies in this situation. Improved breeding has been effective by increasing the hen's ability to handle more feed and convert it into eggs. Apparently higher rates of egg production have not been associated with any decrease in marginal efficiency in feed conversion.

The above reasoning suggests also that there may be room for further progress in increasing egg production per bird if means can be found for stepping up the hen's physiological capacity. This may become possible either through breeding, feeding, or some combination with management.

Work with amino acids, and other nutritional factors indicates that the way is still open. Both the feed-egg relationship found in the Glendale experiment and the high percentage of feed used for maintenance in the case of the hen means that as production increases, the average output per unit of feed increases more rapidly than is the case with many other types of livestock production.

The Glendale experiment, although suggestive, is limited in application. This type of work needs to be expanded to cover additional situations and conditions. Additional work on input-output relationships in egg production might well be done as a joint poultry-husbandry and farm-management project perhaps in cooperation with several state agricultural experiment stations, following the pattern used in the input-output study in milk production.[14] The project should include use of other breeds and strains of chickens and different rations fed at a greater number of different levels of feed intake than were used at Glendale, Arizona.

[14] Jensen and associates, *op. cit.*

THE STATUS AND POSSIBILITIES OF RURAL PRODUCING COOPERATIVES

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MR. T. V. EMCLIANOFF at the end of his book, *Economic Theory of Cooperation*,[1] concludes that: "'Productive' cooperative associations . . . always (have) been a favorite type, supported by public opinion, by its socio-reformistic enthusiasts, by governments in various states, and by special subsidies, public and private. Despite this, and notwithstanding never-ceasing attempts to promote and organize such associations, they have not demonstrated any viability and still remain a lifeless theoretical scheme without any chance of realization in a surveyable future."

In spite of this categorical statement a reconsideration of the status of producing cooperatives in general and rural producing cooperatives in particular appears to be warranted, if only for two reasons. First, and this aspect appears to be of primary interest at this particular time, it may be well to consider whether and to what extent rural producing cooperatives can play a role in the implementation of President Truman's bold New Program, point four of his 1949 Inaugural Address. Second, the Russian and Israeli experiment with regard to rural producing cooperatives on a large scale, as well as the numerous machinery pools in various countries, including the United States, furnish interesting material for analysis. To study the possibilities and implications of using rural producing cooperatives as an instrument in the development of economically less fortunate and little developed countries, is a major concern of this paper.

Concepts and Characteristics

In order to describe properly some of the main characteristics of rural producing cooperatives, it may be well to indicate first the position occupied by them in relation to other types of cooperative efforts. From an over-all view it is quite convenient to group cooperatives into three major groups according to function.

(1) Purchasing cooperatives, formed by people who pool their

* The writer acknowledges indebtedness to Professors M. R. Benedict and J. B. Condliffe for important suggestions.

[1] Ann Arbor, Michigan, Edwards Brothers, Inc., 1942, pp. 253–254.

needs for goods and services which they purchase jointly. Their primary objective is to purchase more economically or, as it is often called in more technical terms, to maximize their members' satisfaction.

(2) Marketing cooperatives, formed by producers who pool for joint sale their products which they produce individually. Their primary objective is to assist their members in maximizing their profits.

(3) Producing cooperatives, formed by producers who pool their labor and/or machinery in order to produce goods and services jointly. Their primary objective is to assist their members in maximizing their profits.

The three major types of cooperation have been presented in this succession for an important reason. The three types follow each other in an order which corresponds to the decrease in the number of fields in which the individual is free to make his own decisions, independent of group decisions. For example, purchasing cooperatives may be considered as a type of cooperation which least curtails private decisions. From this point of view one may say that purchasing cooperatives are the lowest type of cooperation. Almost no purchasing cooperatives require members to patronize exclusively the cooperative store or services. All other facets of the individual member's life are also left untouched.

Not so in the other two types of cooperation. Members of marketing cooperatives often sign agreements to market all of one product (with the exception of that for home use) through the cooperative. It is also common to find members of agricultural marketing cooperatives belonging to related purchasing cooperatives at the same time. In some cases, for instance the California Fruit Growers Exchange, the marketing cooperative also fulfills the functions of a cooperative purchasing agent of fertilizer, packing material, etc. It immediately becomes clear, that membership in a marketing cooperative is likely to curtail a person's private decisions to a larger extent than membership in a purchasing cooperative. Members of producing cooperatives, with the exception of machinery pools, relegate even more of their individual decisions to the cooperative. All producing cooperatives which pool their members' labor simultaneously fulfill also cooperative purchasing and cooperative marketing functions.

Producing cooperatives may be further grouped according to

whether they operate in rural communities or industrial cities. This paper will be concerned with rural producing cooperatives. These may be subdivided into three major types:

(1) *Rural machinery pools:* It is one of the interesting phenomena of our age that people living in capitalistic, socialistic and communistic countries all pool certain efforts and equipment. The reason is simple. The furnishing of certain goods and services on an individual basis poses problems which are practically insurmountable. People have become accustomed to having national security, police and fire protection, postal services, etc., furnished not on an individualistic private basis, but by public pools. In the same way, all the world over mechanization has apparently induced small holders to pool heavy agricultural machinery, such as tractors, plows, mechanical spraying machines, harvesters, threshers, pumps, etc. It is because of the fact that the small farmer seldom can finance and effectively use large mechanized equipment that rural machinery pools are gaining in importance. In the United States, for instance, a considerable part of rural electrification is carried out on a cooperative basis. Farmers cooperate and with the aid of government loans pool resources to purchase and jointly operate equipment which furnishes their farms with electric power, a service which obviously cannot be economically supplied by each farmer separately.

(2) *Collective farms with commercial enterprises operated cooperatively:* Since the start of the twentieth century, collective farms in which all commercial enterprises are operated jointly have been on the increase in many countries. Russia, Poland, Bulgaria, India, and Israel are a few of the countries which are experimenting on a rather large scale with this type of rural cooperation. Under such a setup relatively large tracts of land are jointly operated by member-farmers, who have their private individual dwellings and small gardens. On these small plots each family can produce its own fruits and vegetables and can even support some livestock to meet the family's needs for dairy products, eggs and meat. Such collective farms are usually managed by a committee of management elected by the farm's members. At regular intervals the total net returns of the farm are distributed among

its members according to formulae which are based on members' input and participation.

(3) *Collective farms with all property being pooled and operated cooperatively:* In a very few countries, for instance Israel, a considerable segment of the agricultural sector is composed of collective farms in which members pool all their property. All land, shops, livestock and dwellings are cooperatively operated and, for all practical purposes, no private property exists. No wages are paid, but all individual needs are met by the common treasury. All members are equally compensated. Here, as in type (2), a committee of management, elected by the members, decide the farm's organization, its products, each member's work, etc. This type of rural producing cooperative, indubitably, curtails privacy and individual decision much more than either of the preceding types.

In summary it may be stated that among the various types of rural producing cooperatives, machinery pools curtail individual decisions least and, therefore, their successful operation poses fewer problems than the others. Collective farms in which all property is pooled and jointly operated is the other extreme. Here, group interest and decision almost completely supersedes individual interest and decision. In countries in which for generations people have been accustomed to live their private lives and to make their individual decisions, cooperative efforts inherently generate centrifugal forces which are apt to disrupt cooperation. The more extensive the people's individualistic tradition and the more the individual's interest diverges from that of the cooperative, the stronger will be such disruptive forces. There exist apparently two major forces which can counteract such centrifugal forces. For one, compulsory cooperation offers the dissatisfied members little room for the expression of their feelings and inclinations. On the other hand, common background, beliefs, ideals and outside pressure constitute forces which have proved capable of perpetuating voluntary cooperative efforts for generations. The Mormons and the Israelis furnish good examples of the latter case, while the collectivization by decree in Russia is a good example of the first. Both forces have their limitations. Compulsory collectivization is not consistent with freedom of choice, while, as the outside world changes, common beliefs, ideals and external opposition may dwindle away or lose their comparative importance. It is this latter fact which appar-

ently hit hardest cooperation among the Mormons in the United States.

After these initial general remarks it may be well to consider from close by some of the more important rural producing cooperative efforts of this century. Among the large-scale efforts, the Russian and the Israeli are certainly the most outstanding and therefore warrant some analysis.

The Russian Experiment

After the Russian revolution in 1917 apparently no effective programs for the redistribution of land were implemented in spite of previous discussions. Instead, land-hungry peasants seized and redistributed the land which earlier had been held by large landowners. As a result the land became more and more subdivided and the State was left with relatively small farming units. At the same time the need for greater agricultural output became more and more urgent. To meet these needs by modernizing and mechanizing agriculture and to tie the farm sector closer to the industrial sector, the planners of the first five year plan (1928–1932) decided to collectivize agriculture. While in 1929 only about four percent of all farms in Russia were rural producing cooperatives, by 1938 they had grown to 94 percent.[2]

The collectivization of Russian agriculture was carried out under government sponsorship and supervision. It was not a voluntary movement. According to government decrees, rural producing cooperatives,i.e., Kolkhozes, were established. Kolkhozes are a variation of rural producing cooperatives, discussed as type (2). The land of a Kolkhoze belongs to the State, and all commercial enterprises are operated cooperatively while members live in individual dwellings surrounded by small plots of land for individual use. In order to stimulate production by mechanizing agriculture, Kolkhozes are furnished with mechanical equipment by government-owned and -run Machinery and Tractor Stations, which are found all over Russia. Machinery and Tractor Stations receive their equipment directly from the State and make it available, at fixed charges together with expert advice, to the Kolkhozes. It seems that the Machinery and Tractor Stations constitute a major link between the State and each Kolkhoze. Through these stations the State on

[2] Rabinowitch, Germina, "The Kolkhozes in the U.S.S.R." *Rural Sociology*, Vol. 8, No. 3, Sept. 1943, p. 256.

the one hand furnishes technical advice and instruction, and on the other controls agricultural production of the entire country.

Under this setup the interest of the individual and the group often clashed. Compulsion, usually favoring the group interest, counteracted all centrifugal forces which otherwise might have disrupted the cooperative effort. Thus, when by 1939 the members of many a Kolkhoze had been putting more and more emphasis on their small individual holdings (which were attached to each house), showing strongly individualistic tendencies, the State interfered. In May 1939 the Central Committee of the Communist Party and the Council of People's Commissars of the Soviet Union issued an order which was aimed at protecting land belonging to the collective farms against attempts at individual appropriation on the part of farm members or against attempts to extend individual holdings beyond their original limits.[3] In September 1946 another order titled "Measures of Liquidating the Violations of the Charter of the Agricultural Artel in Kolkhoze" was issued.[4]

It should be realized, however, that in spite of all negative aspects of this system, the rural producing cooperatives together with the Machinery and Tractor Stations furnished an excellent instrument through which mass education, training and mechanization could be implemented very rapidly and on a very large scale. In this sense, this system offered a convenient vehicle for the development and improvement of Russian agriculture.

The Israeli Experiment

While the collectivization of farms in Russia was compulsory the movement of rural producing cooperation in Israel was a wholly voluntary, grass-root movement. The Jewish settlers who entered Israel early in the twentieth century had little, if any, farming experience. Living and farming conditions in the new homeland were most challenging, due to the adverse climate, strange and often hostile environment, lack of funds and experience. At the same time, these settlers had been shaken in their belief in the old European system of individualism, and were imbued with an idealistic desire to create a new social order. This ideal was to take the form of large-scale cooperation, a form which helped

[3] Rabinowitch, *op. cit.*, p. 259.

[4] Jasny, Naum, "The Plight of the Collective Farms," this Journal, Vol. 30, No. 2, May 1948, p. 305.

solve many of their problems such as lack of funds, experience, changed environment, prevalence of disease, etc.

In 1908 the first Kvutzah, a rural producing cooperative of type (3) was established at Daganiah. Since then their number has been increasing steadily. In 1938 about 30 percent of all Jewish villages in Israel were Kvutzoth (plural of Kvutzah) and by 1942 the percentage had increased to about 36 percent. There are two major types of Kvutzoth. One type has an average membership of about 100–200 members while the second, usually referred to as Kibbuz, has a membership of up to 1,000 members. The reason for this difference is primarily a philosophical one. Those who favor the small unit maintain that a cooperative is only an enlarged family consisting of people with common interests and social, cultural and human ties. Those, however, who favor the larger unit maintain that such an environment offers the individual more chances to develop and to associate himself with people who share his social, cultural and human interests.

Each Kvutzah is governed by the general meeting of its members, which elects a committee of management to execute administrative duties. A secretary-treasurer handles the cooperative's finances, a work-organizer assigns each member to his respective job and a Mukhtar handles the cooperative's external relations. Standing committees assist the committee of management.

Thirteen years after the first Kvutzah had been established another type of rural producing cooperative made its appearance. Many settlers who were eager to cultivate the homeland were not willing to give up so much of their individualism. In 1921 the first Moshav-Ovdim was established at Nahalal. A Moshav-Ovdim is a village consisting of individual farms. Each farmer in the village decides what and how much to plant, but big farm machinery, cold storage houses, etc., are purchased and operated on a pool basis. Almost all members belong to the same marketing cooperative as well as purchasing cooperative.

In the late 1930's yet another system of rural producing cooperative was started. In many respects it is a compromise between a Kvutzah and a Moshav-Odvim. Settlers became more and more aware of benefits which result from large-scale farming as well as from a certain degree of individualism. The Meshek-Meshutaf, a rural producing cooperative of type (2), resembles in many respects the Russian Kolkhoze, with the exception that it is entirely volun-

tary. All commercial enterprises are jointly operated, while each family lives in its own dwellings and cultivates its own small garden. At the end of the year the cooperative's net returns are divided among its members. The remuneration is according to the respective contribution of each member.

There can be little doubt that rural producing cooperatives have been one of the most important factors in the development of Israeli agriculture and to a certain extent of the entire economy. The continuation and perpetuation of rural producing cooperation in the Kvutzoth form is faced by most severe dangers. This type of cooperation minimizes private decision and therewith generates a maximum of centrifugal forces. Once the conditions of the State of Israel and its people have improved sufficiently and the pioneer atmosphere has dissipated, many of the centripetal forces will have disappeared. Life in New England in the early colonial period furnishes an interesting parallel. Adverse conditions exemplified by Indian attacks led to close cooperation between the early pioneers. Once conditions improved, many joint efforts disappeared. The odds are that, without government interference, future types of rural producing cooperatives which leave more room for individualistic tendencies will gain in importance.

Rural Producing Cooperatives and the Development of Economically Underdeveloped Countries

There are strong indications that a sincere effort to better the plight of economically less fortunate people is in the making. It is a fact that almost all of these economically underdeveloped countries are predominantly rural in nature.[5] As a matter of fact, it is partly because of pronounced rural character that these countries are in many respects backward and have such relatively low standards of living. It is obvious, therefore, that if the standard of living of the people of these underdeveloped countries is going to be raised, an initial major effort has to be made within and by their rural sectors.

In general it appears to be true that in the rural sectors of most economically underdeveloped countries the level of living is relatively low, because output per man-hour is low, technical know-how and training very limited and pressure on the land consider-

[5] It is estimated that, for instance, at present about 75 percent of China's, 70 percent of India's and 78 percent of Korea's population is engaged in agriculture.

able. The question is whether and how much rural producing cooperation planned to conform to the people's education and tradition can help to improve this state of affairs. It is well to inquire whether and to what extent rural producing cooperatives can contribute by facilitating the gradual mechanization and improvement of agricultural practices, the spread of technical know-how, and the healthy development of small-scale rural industries.

Low productivity of farm labor together with a generally unsatisfactory state of farming in many economically underdeveloped countries is related to the small size of farming units. Land-wasting and work-impeding stone walls or hedges, which so often encircle these small holdings, further complicate the problem. If joint cultivation of certain lands would be accepted, stone walls could be removed and plowing of larger areas of land possible. Gradually larger and more modern equipment could be introduced which in many cases could lead to more productive and desirable cultural practices and, possibly, higher total output. The cooperative would often be able to borrow and pool capital, in order to finance such improved practices, which to individual small holders would prove to be inaccessible. In this connection one should recognize that even in the United States cooperative purchase of heavy farm machinery has been common among farmers for many decades.

One factor, among others, which makes the problem of education and vocational training so difficult in most Far Eastern countries, is the multitude of farms. Under such conditions it is hard for authorities to reach any large number of farmers. Also, farmers who are living on such small land holdings as to be always close to starvation, can hardly afford to try out and introduce better cultural methods. They are often afraid to deviate from the traditional practice, because crop failure may prove to be ruinous and fatal. Once, however, groups of farmers, and in particular producing cooperatives, are found all over the land, the authorities' physical problem of reaching their rural population has greatly diminished. Each cooperative can assist in diffusing information, education and vocational training to the members and see to their judicious application. Because of the fact that all rural producing cooperatives have certain common features, they offer a convenient framework for the general spreading of know-how.

Rural production cooperatives need not necessarily be exclusively agricultural. Many Israeli Kvutzoth not only maintain

shops designed to build and repair certain agricultural equipment houses and tools, but also manufacture certain nonagricultural articles for sale. Rural communities can produce parts of their own nonagricultural needs, while certain amounts of various products can be offered for sale. Products do not necessarily have to be in the nature of end-products, but they may be components of agricultural implements, textile accessories and parts of machine tools which are assembled at factories for further manufacture. The development of small-scale industries by rural cooperatives, besides complementing agricultural efforts, has two very important facets. Almost all economically underdeveloped countries lack capital and capital goods as well as possibilities to acquire them on a large scale in the near future. Here, in the process of initial development rural small-scale industries would come in very handy. Also, such a setup could absorb a considerable part of the population which at present is either not very productively employed or which may no longer be needed in agriculture once cooperation is introduced.

It seems, therefore, that rural producing cooperatives can fulfill an important part in the economic development of underdeveloped countries. Mahatma Gandhi and his followers go even further, hoping that rural producing cooperation will assist in the raising of people's standard of life as distinguished from raising their standard of living.[6] This, however, is outside the scope of this paper. Instead, some of the problems which are related to the introduction and expansion of rural producing cooperatives in economically underdeveloped countries will be considered.

It should be realized that not all countries, if they use cooperative producing methods at all, will and should use the same method. Education and traditions will and should be one of the major factors which determine the type of rural producing cooperative. Farmers like the American farmers, for example, who are accustomed to individual farming can hardly be induced voluntarily to join collective farms. Still the same farmers may be willing to join various machinery pools. At the same time, it might be expected that the village farming which existed in India prior to the British Administration would furnish an important precedent and tradition on which relatively widespread rural producing cooperation could be built.

[6] In Gandhi's vocabulary "standard of life" relates to the human and social side of life while "standard of living" relates to the material side.

With respect to the speed with which rural producing cooperation can be introduced and expanded there will in general be a difference as to whether the cooperative effort is voluntary or compulsory. Voluntary cooperation historically always has been a relatively slow process. Whatever the conditions would be under which the various economically underdeveloped countries would introduce and broaden cooperation, they would be badly handicapped by lack of local leaders and managers, who could successfully head cooperatives. If nothing else, paucity in number of trained personnel who would be able to organize and head cooperatives will considerably slow down potential rural cooperation in these countries. Recognizing this fact these countries should make an all out effort to train leaders and personnel.

In conclusion it may be stated that at present in many countries rural producing cooperatives exist. In certain countries they constitute important parts of the agricultural sector. As the world gains in cooperative experience and it becomes increasingly clear that certain facets of rural producing cooperation may constitute convenient tools in the development of underdeveloped countries, cooperative rural producing efforts may very well gain in importance. Rural producing cooperatives can facilitate gradual mechanization and improvement of agricultural practices, spreading of technical know-how and rural small-scale industrialization. It is for this reason that India and China very likely will soon furnish a large-scale testing ground for various types of rural producing cooperatives. Some Near Eastern countries with the Israeli experiment before them are beginning to think of launching their own experiments in this field. There seems to be no reason why, with proper guidance, the benefits of rural producing cooperatives cannot be reaped under various types of government.

NOTES

SOME RULES FOR MAKING ECONOMIC STUDIES IN A POLITICAL ENVIRONMENT

1. Be sure the sponsoring agency is square and wants an honest job done.
2. Get a clear concise assignment.
3. Stick to your study.
4. Don't play politics yourself.
5. Stay out of the newspapers.
6. Let your job speak for itself.
7. Report only to your own chairman. Let him take the bows—and the brickbats.
8. Be sure you have a reasonable amount of emotional stability, otherwise you will be quite unhappy.
9. Don't try to answer political attacks.
10. Be fair with the people you are studying. Give them a fair, complete hearing. Be sure you understand them. Accept no favors but don't be stand-offish and holy. Have a clear understanding with top management. If you play it square, they will respect you even if they don't agree. Keep your mouth shut. Don't gossip. If a company can influence you, they will not respect you and will be slow to take you into confidence.
11. Report *all* the facts. Don't color them or emphasize them to support your own or any one else's prejudices.

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A COMMENT ON "PLANNING AND CONTROL"*

PLANNING AND CONTROL, admitted to the field of respectable economics very reluctantly and only because of war and depression emergency, I submit are now with us to stay. They are here not as stepchildren or temporary expedients. They have so completely pervaded our system that only those on the most stubborn fringes of intellectual life continue to rant that the "norm" is the automatic system of classical economics and that all these interferences are merely temporary and unholy aberrations from the "norm." I refer, of course, to the National Association of Manu-

* This note is a digest of extemporaneous remarks made at Laramie, Wyo., August 19, 1949.

facturers and the instructors in nine-tenths of all courses in elementary economic principles. The prevailing attitude at the meeting of the American Farm Economics Association at Laramie was in striking contrast, in this regard, to that of the three-day Forum of Labor, Agriculture and Industry held there immediately preceding. Throughout that "Forum," heavily weighted on the side of what I shall call, in polite understatement, "conservatism," was an undercurrent of dreadful fear regarding "planning and control" of economic activity. At the AFEA meeting they were accepted as necessities; the most conservative statements heard being but requests that controls be kept to a minimum and that bureaucracy please quit acting so almighty and be a little more responsive to the decent and respectable local-powers-that-be. Farm economists have apparently become the leading iconoclasts of this day, albeit with great reluctance—with reluctance because it scares anyone to find his precious little stock of absolute truths melting away.

Are we ready for an age when humans will determine their own destiny and so-called natural laws will be repealed one after the other? Obviously not, as we were not ready for the atom bomb or as society is never ready for what remorseless technological progress forces upon it. Yet, we must succeed. I quote from Mr. Harold Rowe's paper:[1]

"My own interest in this whole subject is rooted partly in a belief that study of the war experience can yield results applicable to conditions of peace as well as to those of war. In a way, it reflects a suspicion that the economic conditions of a military emergency are not so basically different from those that may develop in other situations, and hence are not so exceptional as is oftentimes supposed. Greatly expanded government intervention in the operation of the branch of the economy which receives primary attention in the work of the majority of us here has been based upon more or less continuous recognition of some degree of cyclical or war emergency throughout most of our experience."

I submit that the United States is henceforth arrived at a point where the need for planning and control is accepted as a datum. The world other than the new world has been in such state for some time, but the new world has not, because of its great good fortune in location, physical resources, and youth. I quote again from Mr. Rowe:

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[1] Presented at Laramie and to be incorporated in a forthcoming Brookings Foundation publication.

"If, to use a classification sometimes employed by military experts, instead of comfortable war such as the last, we were to experience an austere war, this compulsion toward planning would be greater. Conditions in a real war for survival would call for complete planning."

Many of us believe that the world as we prefer it, is now at war for survival against the world as we do not prefer it. I shall omit entirely discussing the question of "why" or "whose fault."

But our foundations have fallen away. We find in the haphazard control experiences of the war that if the so-called automatic allocation of goods in the market according to demand expressed in money is no longer available to us, we are lost. There may be other allocation measures conceivable to man. Measures of necessity, technological and psychological, can perhaps some day be discovered and charted on a grand combination of thermocouples, ammeters, and "electrocraniographs," but we do not have them today. About all we have so far are public opinion polls and a growing body of social investigation and research, various segments of which we represent.

We practitioners of the art of economics stand before the economic facts of life in 1949 pretty naked. It is my humble opinion that an admission of that would do us a lot of good and perhaps open our minds to some possible answers which cannot now penetrate through the rank growth of dogma that heretofore has had possession.

As an exercise in rejecting dogma I refer to a portion of Mr. M. K. Bennett's paper[2] where he says:

"The producers are to become stepchildren even more than before—residual claimants to what they produce and debtors to the state whenever crop failure, equally with their own recalcitrance, occasions a shortage in their deliveries to the state. What a contrast with the position of agricultural producers in the United States! . . . Finally, there is reason to query the possibility of marked improvement in livestock output so long as the farmers do not own their stock and must collectively market the product as the state decides. Why should efficient husbandry be expected of them? Is it to be supposed that either patriotism or fear of punishment for neglect could, in the care and feeding of animals, substitute at all fully for the incentive of private ownership? I doubt it.

"Adding all of these doubts together, I am inclined to appraise as rather remote the probability that the Soviet Union under its present system of government will have achieved by 1959 a composition of the national diet much better than it was . . . ."

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[2] Presented at the Annual Meetings at Laramie.

I submit that in this excellent description of Soviet food potential, these personal judgments are misleading. Believe me, these ownership factors, which some people might call "natural instincts," are not necessarily so at all. I agree with Mr. Bennett that the Soviet Union cannot by decree affect rainfall and wind, but it can change many purely social, as opposed to physical, "instincts." I saw this kind of fanaticism in action in Germany in 1937, 1938, and 1939, and knew several brilliant young Russian officers in Korea in 1946, 1947, and 1948. I was completely aghast at what the religious fervor of a particular social dogma can do to the minds even of scientists.

But such fervent dogma is not limited to the communists. In this planned and controlled world, dogma could take possession of us. It could throw us into fascism or communism, government by a self-perpetuating elite. It exists even now, and has existed for a long time. I was also aghast when an intelligent young man speaking at the Forum of Labor, Agriculture and Industry, at Laramie, on behalf of a trade association serving utility companies, swinging his arms in a ministerial fervor of exhortation, damned all Americans who did not agree exactly that *he* and his stock of cliches represented the virtues of freedom, good, truth and beauty. Those who did not agree were "statists," a low form of "socialist."

He was for a controlled economy too, but the control was by a different and smaller group than most of us in America would be willing to trust.

In this world of planning and control of human affairs, where absolute truths are evaporating under the impact of scientific progress, what can we hold to? There is no completely satisfying answer. Perhaps the best we can do is be cautious of dogma and words without meaning, to do the best we can to close the gap between scientific progress and human institutions, and at all times to hold firmly before our eyes a big healthy black question mark.

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THE INHERITANCE PROCESS AS VIEWED THROUGH THE PROBATE COURT IN DANE COUNTY, WISCONSIN

A COOPERATIVE research project, conducted jointly by the law school and the department of agricultural economics of the University of Wisconsin, was made as an exploratory investigation of the possibilities of using probate court records as a source for research in the fields of inheritance and capital accumulation.

The master sample for this study was selected from the death certificates recorded in the Register of Deeds' office for Dane County. The death of every resident of the county is recorded there regardless of where that resident died. Only decedents who had been legal residents of Dane County and over 20 years of age on death were selected. The five years 1929, 1934, 1939, 1941, and 1944 were selected for study. A 20 percent sample of death certficates for these years yielded a master sample of 983. Pertinent information from each death certificate sampled was recorded to supplement and check the information contained in the probate court records. For instance the death certificates provide more information as to occupation, age, sex, marital status, residence on death, etc. than do the estate records. Each schedule so obtained was checked against the index of probate court proceedings to determine whether an estate had been probated for the deceased person. If a record of any such proceeding was found, the type was recorded along with the file number of the record. In cases where any doubt existed as to whether the individual named in the death certificate and the probate court index were the same person, further checks were made through comparison of information on the death certificate with that in the folder for the estate. A sample of 415 estates was drawn by this procedure. Of these, 172 were testate estates, 195 were intestate estates settled by regular probate procedure, 33 were termination of joint tenancy only, and 15 were descent of lands proceedings.[1]

Only 42.2 percent of the decedents in the master sample had an estate which passed through probate court. People who were classi-

[1] In these last two types of cases relatively little formal court action is required, and as a result the folders for these estates contain considerably less information than the regular estate folders. For this reason it has not been possible to include these estates in some of the tabulations.

fied[2] professional or proprietors (these were considered as one occupational group) had the highest proportion of estates probated of any occupational group with 66.2 percent of all such people having an estate. Farmers ranked second with 51.4 percent leaving an estate which passed through probate court. As might be expected a smaller proportion of women left estates than did men in any of the occupational groups. Only 33.1 percent of the women left estates. Inclusion of the 149 women undoubtedly had the effect of lowering the overall proportion of people leaving an estate—just as the inclusion of the 57 professional and proprietary people had the effect of raising the proportion. If these two extreme groups were excluded, the average proportion of people who left an estate would be 45.6 percent.

As might be expected, people between the ages of 70 and 90 had the highest proportion of estates (47.2 percent) which entered probate court. People between the ages of 20 to 50 (only 10.1 percent of all the people in the master sample) had the smallest proportion (30.0 percent) of estates probated. The proportion for people from 50 to 70 was 38.4 percent and for people over 90 it was 43.3 percent. This is about the pattern one might expect, since it is between the ages of 20 and 50 that the greatest effort is required to support and educate a family. It is logical to expect that people over 90 would also be less likely to leave an estate since most people of that age have been using up past accumulations of wealth to maintain themselves.

This study indicates that few people accumulate any sizable fortunes during their lifetime; 45.3 percent of those people having an estate which passed through probate court had a net worth on death of less than $5,000.[3] For Dane County as a whole this meant that about 77 percent of the people accumulated property worth less than $5,000 free of debt during their lifetime. Only 10 percent of the estates studied had a net worth on death of $25,000 or more. For Dane County as a whole, this meant that only about 4.2 percent of the people accumulated property worth more than $25,000 during their lifetime.

The average net worth on death for all estates probated was $11,500. The presence of 13 estates with a net worth of more than

[2] The occupational classification used here is based on the Works Progress Admin. Circular No. 2, *Occupational Classification and Code*, 1935.

[3] Net worth as it is used here, includes the face value of all insurance, tax exempt property, and "gifts made in contemplation of death." The latter term is defined by law in Wisconsin as any gift made within two years of death.

$50,000 had the effect of raising this average figure substantially. When considered by occupational groups, the professional people and proprietors (66.2 percent of them had estates probated) was the group with the highest net worth on death with an average of $23,868. This group also had the greatest fluctuation in average size of estate on a year to year basis, with a low average of $4,300 in 1939, and a high average of $50,900 in 1944. Farmers as a group ranked second in size of net worth on death (51.4 percent of them had estates probated) with an average of $11,400. The average net worth on death for all other people (41.1 percent of them had estates probated) was $8,784.

The most striking feature of this analysis of the size of estates is the fact that even in Dane County, which should be more prosperous than the average county, there are very few people who manage to accumulate any substantial amount of wealth during their lifetime. This simple fact provides eloquent comment on the need for old age security programs. Five thousand dollars is certainly not enough money to provide security for the old age of any individual in this day and age, yet more than 77 percent of the residents of Dane County had less than this amount when they died.

A comparison was made between farmers, professional and proprietory people, and people in other occupational groups with respect to the composition of estates. Farmers definitely appear to have a larger proportion of their assets tied up in real estate than any other occupational group. They held farm real estate equal to 45.6 percent of the net value of the estate, and urban real estate equal to 7.3 percent of the net value of the estate. Professional and proprietory people, on the other hand, have farm real estate with a value equal to 3.3 percent of the net estate and urban real estate with a value equal to 35 percent of the net estate. People in other occupations have farm real estate with a value equal to 7.3 percent of the net estate and urban real estate with a value equal to 35.7 percent of the net estate.

People with smaller estates had a larger proportion of their holdings in real estate than did people with larger estates. This tendency was evidenced in all three occupational groups. In each occupational group, for the estates with a net value of less than $5,000, the real estate holdings were valued at more than 90 percent of their net worth.

Professional and proprietory people appeared to possess fewer liquid assets in relation to their net estates than other occupational

groups. Cash and bank deposits for this group were equal in value to only 5.7 percent of the net estate. For estates of from five to fifteen thousand dollars net worth the proportion was 10.2 percent of the net estate. This was the highest proportion noted in any size group for people in this occupation. Farmers held cash and bank deposits worth 16.8 percent of their net estate. This proportion varied from a high of 23.1 percent for farmers with a net worth on death of less than five thousand dollars to a low of 15.2 percent for farmers with a net worth on death of from twenty-five to fifty thousand dollars. People in other occupations held cash and bank deposits valued at 14.1 percent of their net worth at death, with a high of 19.2 percent for those with net estates of less than five thousand dollars and a low of 10.3 percent for those with net estates of from fifteen to twenty-five thousand dollars.

The farmers in this sample made very little use of life insurance. The average face value of such insurance was equal to only 0.4 percent of the net estate. This may indicate that farmers as a whole depend principally on their investment in the farm business to provide security for their old age and for their dependents. Professional people and proprietors carried the largest relative amount of insurance with an average value equal to 25.1 percent of the net estate. This proportion for other people was 4.4 percent. Only 16.9 percent of the people with estates carried any life insurance at all. The amount of insurance carried by these people was also very small. In 43 out of the 70 estates where life insurance was carried the value of that insurance was less than $2,500. In only 12 out of the 70 cases was the amount of insurance over $9,500.

The question has frequently been raised as to whether or not a "will" makes any difference in the expense or time required to settle an estate. From this study it appears that there is no consistent savings in either time or over-all expense for settling an estate with a will when estates of comparable size are compared. Administrative expenses were further analyzed to get a more precise answer to this question. Attorneys' fees for testate and intestate estates of comparable size were about the same. There did seem to be a somewhat smaller charge for the personal representative in testate estates, but other expenses involved in closing the estates were sufficiently varied between the two kinds of estates to overshadow any slight advantage deriving from the smaller payment to the personal representative.

It is of further interest to note that in 8.6 percent of the estates with wills the disposition of property was identical with that provided by law. In another 11.4 percent of such estates the disposition was *almost* identical with that provided by law.

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ECONOMICS OF MINIMUM WAGES IN RELATION TO THE AGRICULTURAL LABOR MARKET

IN A discussion in this Journal of the economic effects of a minimum wage for farm workers on agricultural welfare and employment the conclusion was drawn that employment would be curtailed and agricultural poverty would be increased if a minimum wage were imposed.[1] It was suggested, first, that a minimum wage would result in higher labor costs, resulting in the "less intensive operation of . . . farm enterprises" and some curtailment of output. This reduction in output might be considerable in view of the fact that the farms which are responsible for the larger share of the total output are the very ones which employ wage-labor.[2] Secondly, there would be a tendency for farm operators to shift from the employment of hired labor to the fuller utilization of family labor or to transfer workers from the category of wage-earners to that of share-croppers.[3] Thirdly, the curtailment in employment and the general inability of displaced agricultural workers to shift into other types of employment would tend to result in an even greater underemployment or unemployment in agriculture.[4] Finally, farm operators would probably prefer hiring workers on an hourly basis rather than on a weekly or monthly basis with a corresponding drop in labor income.[5]

The conclusion that the minimum wage would result in a higher labor cost is based on the assumption that the increased costs cannot be offset by increased efficiency on the part of the workers or by an induced improvement of management techniques on the part of the employers. The argument that farm operators may

[1] Baughman, Earnest T., "A Note on Minimum Wages and Agricultural Welfare," this Journal, November 1946, pp. 1048–61.
[2] *Ibid.* p. 1059.
[3] *Ibid.*
[4] *Ibid.*, p. 1060.
[5] *Ibid.*

tend to displace hired workers in favor of family workers is based on the assumption that the impact of the minimum wage will bear substantially on farm operators who have a small wage-labor force and who find it possible to utilize such family labor. The conclusion that workers would be paid on an hourly rather than on a weekly or monthly basis also assumes that the impact of the minimum wage will be on farm operators who have a small wage labor force, for it is these farmers who generally employ workers on a monthly or weekly basis.

The analysis does not consider the possibility that certain monopsonistic (or oligopsonistic) elements may be present in the farm labor market with a possible "exploitation" of workers, i.e., a failure to pay workers the value of their marginal revenue product.[6] In addition, though it points to possible greater agricultural poverty of the workers because of their immobility, it does not question whether such immobility may also not provide opportunities for "exploitation." To the extent to which such exploitation may exist, the impositon of a minimum wage should have little employment effects. Finally, the analysis does not distinguish between short-run and long-run effects and does not consider certain dynamic factors which may well tend to offset any unemployment effects of a minimum wage.

In this note an attempt will be made first, to discuss the reality of the assumptions and secondly, to indicate the extent to which the condition of "exploitation" may exist in agriculture.

It should be said at the outset, however, that no attempt is made in this note to arrive at a judgment "on balance" of the minimum wage in agriculture. It is proposed only to point to factors, overlooked in the reference article, which are believed relevant to empirical studies necessary to policy decisions in this perplexing field.

Substitutability of farm labor. To what extent will the introduction of a minimum wage in agriculture result in the displacement of farm workers because of higher labor costs? In answering this question two factors must be taken into consideration: the extent to which labor costs represent a small or large proportion of total costs; and the degree to which the employers may have been employing the best management or administrative procedures.

It has been pointed out that the substitution effect of the im-

[6] This definition of exploitation follows that of Chamberlin, E. H., *Theory of Monopolistic Competition* (5th Ed.), pp. 182 ff.

position of a minimum wage may well be offset by certain other factors, such as increased productivity on the part of workers (because of the higher wages) or increased productivity as a result of employers' efforts. Increased productivity of the latter type may result from either the use of other resources (which may result in some drop in employment only if costs rise) or the adoption of management techniques which were previously available but not utilized. That is, the employers are "shocked out of lethargy." If an industry has a relatively low labor cost, the opportunities for improved management will usually be present.[7]

An analysis of wage costs in agriculture indicates that agriculture may well be an industry of low labor costs. In 1946, for example, the wages of farm labor represented about 18 percent of total production expenses.[8] There is reason to believe that the imposition of a minimum wage may result in "shocking" some farm employers into improved methods of production.

If firms have been sheltered "from the full rigor of competition" and if they have been producing over a "prolonged period of rising business activity" one might well expect a certain degree of "administrative laxity."[9] Both elements have been present in agriculture for the past years and it might well be that there is room for certain management adjustments. Such adjustments may result either in greater output with the same labor force or may even result in less work. But it may well be that the decrease in the number of man-hours required to complete one farm operation, due to improved organization, will yield the same income and no change in agricultural workers' poverty. Indeed, in agriculture, it may bring about the displacement of children and some women. Such displacement, rather than increasing agricultural poverty, may improve the welfare of this labor group.[10]

In certain areas, exploitative wages, if they exist (see below), may simply maintain inefficient farm operators. The imposition of a minimum wage may drive these growers out of business. But in the long run more capable men may replace them and the unemployment effects can be nil.[11]

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[7] Stigler, George J., "The Economics of Minimum Wage Legislation," *American Economic Review*, June 1946, pp. 358, 359.

[8] U. S. Department of Agriculture, *Agricultural Statistics* 1947, p. 536.

[9] Reynolds, Lloyd G., "Toward a Short Run Theory of Wages," *American Economic Review*, Vol. 38, No. 3, June 1948, p. 298.

[10] Dobb, Maurice, *Wages*, 1938, p. 131.

[11] Pigou, A. C., *Essays in Applied Economics*, pp. 50–51.

The substitution effects of the establishment of an agricultural minimum wage are not obvious. There are many considerations which must be taken into account, and such wage action, if reasonable, may not have any significant unemployment effects.

Displacement of hired workers by family workers. Although there may be a tendency to replace hired wage workers by family workers if an agricultural minimum wage were introduced, the amount of such replacement will depend, *inter alia*, upon the extent to which the smaller family-size farms employ wage workers.

In 1939 only 4.5 percent of the country's 6.1 million farms, or about 266,000 farms, were responsible for over 54 percent of the 1939 cash farm-wage bill. These farms accounted for only 5.6 percent of all family farm workers employed during 1939. For the United States as a whole almost two-thirds of the farm-wage bill in 1939 represented wages paid to workers hired by the day or week, or piece work and contract work.[12]

These data would seem to indicate that the displacement may not be substantial. And if the minimum wage legislation were applicable only to farms which employed, say, over four farm workers, the problem vanishes.

Wage-fixing combinations of farm employers. The lack of competition among farmers as buyers of labor and the existence of wage-fixing combinations among farm employers may put such employers in a position to "exploit" the farm workers.[13] Such exploitation will take place if, in addition, the demand for workers is inelastic in the "market period."

If the demand for workers in the "market period" is such that there is a limit to the number of workers which can be hired the marginal revenue product curve would be indeterminate at this point. If the wage set by the wage-fixing combination is below this point, exploitation exists.

The extent to which agricultural employers have combined as buyers of labor in order to depress wages below their competitive levels is not easily demonstrable chiefly because such information is seldom publicized. However, the hearings and reports of the

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[12] Ducoff, Louis J., *Wages of Agricultural Labor in the United States*, U.S. Department of Agriculture, Technical Bulletin No. 895, July 1945, pp. 10, 12–13, and 29.

[13] Machlup, Fritz, "Monopolistic Wage Determination as a Part of the General Problem of Monopoly," in Proceedings of the Chamber of Commerce of the United States on *Wage Determination and the Economics of Liberalism*, January 11, 1947, p. 56.

La Follette Committee on the farm labor situation offer considerable evidence that such combinations do exist in the California agricultural labor market and other areas.[14]

The La Follette Committee reported that the wages prevailing in many areas of agricultural production in California "are not customarily the result of collective bargaining procedures. Instead, they are subject to considerable employer control exercised on a uniform basis to avoid the effects of competition for or a local scarcity of labor."[15] The "employers . . . are usually members of an association which has as one of its purposes the execution of policies respecting labor and labor relations. . . . They are concerned, among other things, with labor supply, the setting and adjusting of wage rates, and, more recently, with the questions of employee association, collective bargaining, and labor legislation."[16]

The La Follette Committee points out that these associations grew in number with the development of the wage-labor system. Typical of these associations are the Agricultural Labor Bureau of the San Joaquin Valley, the Farm Labor Service in Arizona, the Western Growers Protective Association, the Grower-Shipper Vegetable Association, the California Fruit Growers Exchange and the local exchanges associated with it, and the California Processors and Growers, Inc.[17]

It is interesting to note that "the groups of employers who meet to fix wage rates are usually organized and led by the large employers." The President of the Associated Farmers of California, Inc., stated that "we frequently find the large operators set the wage scales and he (sic) is the one that does actually create the wage scale and it is usually followed by the smaller farmers."[18]

There is evidence that growers in other states have banded together to fix wages. For example the wages of berry and apple pickers in the Puyallup Valley and Yakima and Wenatchee valleys were for many years set by the fruit growers associations. Evidence before the Tolan Committee indicates that Florida bean growers have met to establish a picking price.[19]

[14] Senate Committee on Education and Labor, 77th Congress, Second Session, Reports on *Employers' Associations and Collective Bargaining in California*, 1942.

[15] *Op. cit.*, Part 3, p. 181.

[16] *Op. cit.*, Part 4, p. 408. The concern of the employers is not to encourage "employee associations, collective bargaining, and labor legislation" but rather to discourage them.

[17] *Ibid.*, pp. 409–410.

[18] *Ibid.*

[19] Schwartz, Harry, *Seasonal Farm Labor in the United States*, p. 71.

Admittedly the evidence of employer wage-determination is sparse. But there are certain basic social, economic and institutional conditions which would seem to require such employer combinations. Farmers may fear, because of social ostracism, to set wages above the level of those set by their neighbors.

On the economic side it must be recognized that in the "market period" or short run the labor costs are strategic and, therefore, the farmers attempt to keep wages as low as possible. This problem is most acute in the harvest of fruits and vegetables since picking cannot be postponed. Furthermore, of all costs which growers must meet, the wage cost is more susceptible to individual grower decisions.[20] For these reasons the farmers seek, either through collective wage determination or the creation of large labor supplies, to keep the wages low.

The existence of local Farm Bureau or Farm Grange organizations and the development of cooperative marketing and shipping organizations provide the institutional framework within which growers can meet annually to set the wage rate jointly.

The bargaining position of the farm worker. Wherever employer wage-fixing combinations exist today one will usually find the employees organized. This, however, is not the case in the farm labor market. Not only are the farm workers disorganized, but the conditions of employer-employee relationships are such as to give the farm operator an opportunity to "exploit" the farm worker. And whatever attempts have been made by farm workers to organize have been resisted and, in some instances interfered with, by farm operators.

Although there have been many attempts to organize farm workers, such organizations have been "sporadic, scattered, and short-lived."[21] The factors which have made the organization of these workers difficult have been economic, social, and political. "Their extreme mobility, the high seasonality of their work, and the low wage rates all combined to make unionization among them costly and, at the same time, created chronic problems for the communities in which they lived. The social status of seasonal farm workers was that of a lower caste, suffering poverty, depending upon relief, and lacking adequate facilities for education, housing, sani-

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[20] Schwartz, Harry, *op. cit.*, pp. 68, 69.

[21] United States Department of Labor, Bureau of Labor Statistics, Bulletin No. 836, *Labor Unionism in American Agriculture*, p. 406.

tation, and medical attention. They were, on the whole, politically impotent and, in many states, disfranchised."[22]

Under such conditions, there are reasonable grounds for concluding that exploitation will take place since the organized farm employer has a greater strategic strength in bargaining with his workers. In the first place, he is accustomed to bargaining with workers. Secondly, the superior financial condition of the employer offers him an opportunity to resist the wage demands of the worker. On the other hand, the inferior financial status of the workers may reduce their mobility, lacking funds to seek alternative employment. And if wage setting by oligopsonistic combinations exists throughout a large agricultural area, even with funds, workers would have little basis for seeking other jobs. Finally, if a worker happens to be a tenant—or a member of a tenant's family—of the farmer, his failure to accept the offered wage may result in his displacement from the farm.[23] The latter problem is particularly acute in the southern part of the United States where a large portion of the seasonal farm labor force consists of this type of labor.

On balance, then, the bargaining strength of the growers appears to be much greater than that of the farm workers, and, on the basis of the social, economic, and political conditions surrrounding the wage bargain, it would be reasonable to assume that a certain degree of "exploitation" exists.

Immobility of farm workers. It has been stated that "probably the strongest case for the creation of labor monopolies to avoid monopsonistic wage determination" may be made when (1) "many labor markets are geographically or occupationally so isolated that employers have no competition in their purchase of labor" or when (2) "chronic unemployment makes employed labor practically immobile and eliminates employers' competition for labor.[24] Thus, the immobility of the workers offers the wage-fixing combination an opportunity to push the wage below the marginal revenue product.

One must distinguish between two groups of seasonal farm labor, namely, the local resident group and the transient, migratory workers. In many cotton areas of the South is found the first type. Each year wives and children of tenant farmers or sharecroppers

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[22] *Ibid.*
[23] Pigou, A. C., *The Economics of Welfare* (3rd ed.), Macmillan and Co., p. 559.
[24] Machlup, *op. cit.*, pp. 56, 58–59.

are employed in the cotton harvest and at the end of the farm operation they leave the labor market. The latter group consists of workers who travel from area to area in search of work and are employed to meet the requirements of the seasonal peaks.

The local, resident seasonal worker is, of course, highly immobile. He is poor in financial resources and unable to move to other areas (particularly in the short-run); the social ties to his home and family are strong; and he is usually ignorant of other employment opportunities. Fear of displacement as a tenant or sharecropper will usually prevent him from "bargaining" for higher wages. And in instances when this local resident, seasonal worker has demanded, or was in a position to demand, higher wages, the growers have advertised for and brought in workers from other areas to maintain wages at the "going rate."[25]

During the past war period farmers pursued a number of policies in order to preserve their farm labor supply.[26] High license fees for labor recruiting agents, special deferment provisions for farm workers under the Selective Service Act, and the provision under the Farm Labor Transportation Program that no workers were to be recruited in any county for work in other areas without prior approval of the county agent who must certify that the county had a surplus of labor are examples of methods employed to "freeze" workers in their areas of usual employment.

The transient, migratory worker who moves from crop to crop would appear at first to be highly mobile. He is, until he reaches the place of employment. Employers have used a variety of devices to bring into the area a "surplus" of labor. Such devices have included the flooding of areas with handbills, local newspaper advertising, radio broadcasts, etc., with the subsequent disorganization of the farm labor market.[27] Once the workers have arrived at the area of "need," they have no alternative but to accept the wage offer.

The economic factor here too plays an important role in forcing growers to adopt such practices. In view of the need for maintaining control over the wage, only a surplus of workers could continue

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[25] See Report of Select Committee on *Interstate Migration*, House Report No. 369, 77th Congress, 1st Session, pp. 364 ff., for many illustrations of this practice. (Hereafter referred to as the Tolan Committee Report.)

[26] Kaufman, Jacob J., "Farm Labor During World War II," this Journal, February 1949, pp. 131 ff.

[27] Tolan Committee Report, p. 364 ff.

such control. Once workers are employed various devices are used to prevent them from "skipping" to other jobs. For example. "bonuses" (actually, "holdbacks") are paid to workers provided they stay on until the harvest is completed; or credit is extended to workers so that they are in debt at the beginning of the harvest and must remain on the farm until the end of the season in order to pay off the debt.[28]

Short Run vs. Long Run Effects. The short run substitution effects of a minimum wage in agriculture may be considerably limited. Particularly in the harvesting of such crops as fruits, vegetables, and cotton (so far) there are few substitutes for hand labor. "Tractors can't work between tightly packed rows and the machine that can harvest broccoli and egg plant and tomatoes has yet to be built."[29]

The substitution effect may, rather, be one of a long-run nature, but in the long run dynamic factors may play an important role.[30] "Over any substantial period of time there are such pronounced changes in productivity, consumer preference, and the general condition of business that the relationship (i.e., between the imposition of a minimum wage and the curtailment of output and employment) is fatally beclouded."[31]

Conclusions

There is some evidence that "exploitation" may exist in agriculture as a result of combinations of employers for the purpose of wage-fixing, and of a considerable degree of labor immobility. Although the evidence of such wage-fixing combinations is limited, certain social and economic forces are at work and certain institutional structures exist which make such combinations necessary (from the point of view of the farmer) and possible. The immobility of workers is not only the result of the political, social, and economic environment of the workers, but also of the direct activities of the growers themselves. To the extent that these two elements—oligopsony and labor immobility—exist in the farm labor market the imposition of a minimum wage may be justified in order to wipe out the existing "exploitation" without any unemployment

[28] U. S. Department of Agriculture, *Backgrounds of the War Farm Labor Problem*, May 1942 (mimeographed), pp. 101–102.
[29] McWilliams, Carey, *Ill Fares the Land*, Faber and Faber Ltd., p. 137.
[30] Reynolds, Lloyd G., *op. cit.*, p. 300.
[31] Ross, Arthur M., *Trade Union Wage Policy*, p. 79.

effects. In other words the competitive solution is not applicable under these conditions.

Furthermore, there is some basis for questioning the substitution effects, even under competitive conditions, of the imposition of a minimum wage for agricultural workers. And, in some instances, such substitution (if it does take place) may not necessarily increase agricultural poverty. The possible elimination of women and children from the farm labor market and the displacement of inefficient farmers may have certain desirable economic effects.

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SOME PROBABLE EFFECTS OF TAXATION ON FARMERS' MARKETING PRACTICES*

DURING the last decade farmers in the United States experienced a period of high-level production and relatively high commodity prices. This combination of favorable circumstances resulted in the highest level of farm incomes in the history of American agriculture. Although incomes were not uniform throughout the farming area over this entire period, in general, total farm production, prices, and incomes have been consistently high since 1941. Paralleling the price and income situation during this period has been a consistent tendency to broaden the income-tax base and to increase tax rates. This combination of circumstances has brought about a phenomenal increase in farmers' tax contributions to the Federal Government.

The purpose of this article is to explore the hypothesis that specific phases of Federal tax policies and administrative procedures influence farmers' marketing practices. It is essential first to present certain background information.

In 1913 the 16th Amendment to the Constitution of the United States was adopted permitting Congress to levy income taxes "without apportionment among the several States, and without regard to any census or enumeration." Because of liberal personal exemptions ($4,000 for married couples) the Federal income tax in the early years 1913 to 1917 touched farmers' incomes to only a minor extent. Tax rates at that time were modest, the "normal"

* This paper represents the author's personal views on the subject under discussion.

tax in 1913 being one percent with no surtax until taxable income passed $20,000. It was not until the high price and income years following World War I that the income tax assumed any importance in the business affairs of farmers.

From 1921 to 1940, the number of farmers paying Federal income taxes and the amounts paid were still of only minor significance. In fact, as late as 1939, according to the Bureau of Internal Revenue's classification of returns by industries or types of businesses, only about 140,000 businesses were listed in the farming category.[1]

Beginning with 1940, substantial increases in Federal tax obligations were effected by merely lowering personal exemptions. Returns for 1941 contained over a million in the farm group. Changes in the revenue code from 1941 through 1943 imposing higher rates and lowering personal and dependency exemptions brought many farmers into the income-tax-paying fraternity for the first time.

Although no tabulations are available as to the number of farmers reporting for the latest tax years, estimates have been made of the amount of taxes paid. Based on available data relating to income distribution and tax payments for sample groups of farmers, the Bureau of Agricultural Economics has estimated that Federal income-tax payments of farmers during the last few years were as follows:[2]

Year Paid	*Amount*	*Year Paid*	*Amount*
1941	$ 15,000,000	1945	$725,000,000
1942	50,000,000	1946	720,000,000
1943	425,000,000	1947	760,000,000
1944	275,000,000	1948	960,000,000

The question arises, in what manner does the frequency and amounts of farmers' income-tax payments influence their marketing schedules and practices. One clue to an answer to this question lies in the method of accounting for or, more appropriately, methods of reporting incomes for tax purposes. Under the present code a farmer may use either the cash or accrual basis for reporting income.

Basically, the cash method allows a business firm, for tax-reporting purposes, to include all cash income actually or constructively received and to deduct all allowable expenses paid out during

[1] Isaac, G. J., "Farmers Taxes," *Agr. Finance Rev.* BAE Vol. 9, Nov. 1946, p. 12.
[2] *Agr. Finance Rev.* BAE Vol. 11, Nov. 1948, p. 90.

the tax year, regardless of the time the income was earned or the expenses were incurred. In actual practice it is estimated that 90 percent of the farmers who file income tax returns use the cash method of reporting.

The accrual basis is really an inventory method of reporting income. Income reported on the accrual basis includes all income earned during the taxable year from sales made in that year, regardless of when payment is received.[3] In addition, increases in inventory values at the end of the year compared with the beginning of the year must be included. Allowable expenses include all business operating costs incurred during the year, whether paid or not, and any decrease in inventory values at the end of the year compared with the beginning of the year.

Obviously, the accrual method of reporting requires a more detailed and complex system of bookkeeping than the cash method. Some few farmers find it advantageous (tax-wise) to use the accrual method, but the vast majority find the cash method more desirable. It is important at certain times for this large segment of cash-reporting farmers to act or to forego action on specific dates within the year. For example, tax obligations may be materially altered by the execution of a sale or delay of execution for a period of as little as 24 hours.

During 1946 and 1947 there was much public discussion of the probability of Federal tax reduction legislation. Perhaps anticipating a lower tax rate in 1947 some farmers carried over their 1946 crops and sold them in 1947. Important tax reductions did not, however, materialize in 1947. Farmers who had carried over and sold their crop in 1947 found themselves in the embarrassing position at the close of the calendar year of having another bountiful crop on hand to be disposed of at exceptionally favorable prices and pay income taxes accordingly, or run the risk of carrying the new crop over into another year. If the farmer sold his 1947 crop (having carried all or substantially all of the 1946 crop over), he would be thrown into a higher income tax bracket and, in effect, would be forced into paying a higher rate of tax in that year on two years' income.

With each new income bracket present surtax rates increase

[3] Tax Court cases have introduced many refinements as to when and how it may be determined that income has been received. Rulings on specific cases, however cannot be considered as having any general applicability.

significantly. In contrast to the four-percent rate in effect in 1917 on taxable incomes in excess of $2,000 and a surtax rate of only one percent on incomes from $5,000 to $7,500 the present basic tax is $400 plus 22 percent of the excess over $2,000. To appreciate the tax significance of income increments of two, four, six, and ten thousand dollars it is necessary again only to review a sample of the schedule of rates in the Bureau of Internal Revenue's 1948 information pamphlet, "How to Prepare Your U.S. Income Tax Return." Excerpts from the 1948 Federal Income Tax Rate Schedule

Over $ 2,000	but not over $ 4,000	—$ 400, plus 22%	of excess over $ 2,000
Over $ 6,000	but not over $ 8,000	—$ 1,360, plus 30%	of excess over $ 6,000
Over $ 10,000	but not over $ 12,000	—$ 2,640, plus 38%	of excess over $ 10,000
Over $ 16,000	but not over $ 18,000	—$ 5,200, plus 50%	of excess over $ 16,000
Over $ 26,000	but not over $ 32,000	—$10,740, plus 62%	of excess over $ 26,000
Over $ 50,000	but not over $ 60,000	—$26,820, plus 75%	of excess over $ 50,000
Over $100,000	but not over $150,000	—$67,320, plus 89%	of excess over $100,000

Rates go as high as 91 percent on bracketed incomes in excess of $200,000 but relatively few farmers are concerned with rates applicable to incomes above the $100,000 level. In the event that receipts from sale of two crops have to be accounted for in the same tax year, a considerable number of farmers would have incomes above the $100,000 figure but in proportion to the total number of income-tax paying farmers the percentage in this group would still be very low. Prevailing high prices, high-level production and high tax rates of recent years have tended to make farmers more accounting conscious. The increasing surtax rates on the higher income brackets are a strong inducement to equalize incomes between years as nearly as possible.

In the absence of primary supporting data, determination of the specific degree of importance to attach to the influence of income tax considerations on farmers' marketing decisions is not within the purview of this paper. Such an attempt would have to be approached through a lengthy process of establishing statistical models which would make possible weighting of the dominant motivating forces that influence farmers' marketing practices or patterns. There is, however, strong evidence to indicate that income tax considerations do enter into farmers' marketing decisions. The following table, illustrative of data compiled on important grain crops, shows that for the last three crop years larger than average movements of wheat from farm to market took place during the month of January, Again it should be pointed out here that

TABLE 1. WHEAT: MONTHLY SALES BY FARMERS—1947 CROP WITH COMPARISONS

United States	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
	Percentage of Total Sales												
1945–46	6.1	22.7	18.4	10.2	8.6	4.8	3.6	8.1	3.2	2.0	1.7	9.3	1.3
1946–47	10.1	18.8	13.5	10.2	6.9	5.8	5.1	10.4	6.6	5.1	2.8	3.2	1.5
1947–48	6.7	23.7	16.2	10.5	7.7	4.3	3.4	6.5	3.5	3.5	5.1	5.9	3.0
1935–36 to 1944–45*	5.6	23.0	14.8	10.4	7.2	4.8	5.3	5.2	5.0	5.6	5.6	4.4	3.1

Source: Crop Reporting Board, Bureau of Agricultural Economics.
* (10 year average).

the great majority of farmers use the calendar-year basis for tax-reporting purposes.

There are no doubt several factors that contribute to the deviation from the general pattern of wheat sales in the month of January. It is difficult to trace the significance of any single motivating factor, but by the process of elimination certain of the factors generally considered to be determining influences may be dismissed.

For the grain crops price, storage, and feed considerations are generally recognized as primary influences affecting farmers' marketing decisions. These three considerations do not, however, appear to be paramount during the time period which is, from the tax consideration standpoint, crucial. It can be assumed that in most instances the storage problem has been resolved by the month of January, thus eliminating this factor as an important influence on sales in January of each of the calendar years considered.

Grain held over for feed purposes is not customarily disposed of until some rather tangible indications of crop prospects for the en-

TABLE 2. WEIGHTED AVERAGE PRICE PER BUSHEL OF REPORTED CASH SALES, SELECTED MONTHS—1945–1948

	1945	1946		1947		1948
Wheat	*Dec.*	*Jan.*	*Dec.*	*Jan.*	*Dec.*	*Jan.*
Hard red spring	$1.72	$1.73	$2.22	$2.21	$3.16	$3.22
Durum	1.75	1.75	2.27	2.22	3.11	3.18
Red durum	1.64	1.63	2.06	2.09	2.93	2.92
Hard red winter	1.69	1.69	2.07	2.09	2.99	3.01
Soft red winter	1.72	1.76	2.22	2.26	3.03	3.08
All classes and grades[1]	1.71	1.72	2.17	2.18	3.11	3.15

BAE—Crops and Markets, Vol. 24, No. 1, Jan. 1947; Vol. 25, Jan. 1948. Data for Jan. 1948 from unpublished records.

[1] Six markets: Chicago, Minneapolis, Kansas City, St. Louis, Duluth, and Omaha.

suing year are in evidence. There are few indications of prospects for the new crop as early as January.

It does not appear that fluctuations in prices between the months shown in Table 2 were significant enough to have had any appreciable influence in shaping farmers' decisions to sell in the first month (January) of each of the three new calendar years as compared with the previous month of the closing year. In fact, the theory is often advanced that farmers are inclined to sell on a declining market. The foregoing price figures show, in the case of wheat, that prices were tending upward in the first month (January) of the three years shown. Concern over prices, therefore, could hardly be the cause of the relatively heavy sales of wheat in the month of January.

Conclusions

The hypothesis that Federal income tax policies influence marketing decisions of farmers has not yet been adequately explored to determine the actual degree of importance. But every avenue thus far explored indicates that they do influence the marketing process. Although considerable hearsay evidence could be offered in support of the hypothesis, final judgment must await further evidence. It is hoped that this working hypothesis and the general interest exhibited in proposed research to study the problem in detail will lead to a complete analysis of the role of taxation in the marketing and distribution system.

To the extent that adjustments in the marketing program of an individual farmer or group of farmers for tax consideration purposes have a stabilizing influence on farm incomes, such adjustments might be considered highly desirable. It is, however, quite improbable that any net stabilizing influence will be gained from such practices.

Although other motivating forces may predominantly govern the marketing decisions of farmers, recent progress in developing storage facilities for both staple and certain perishable commodities lends increasing importance to the "tax angle" in the market place.

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LONG-TIME ECONOMIC PROSPECTS FOR AGRICULTURE?

HAVE agricultural economists in their outlook and price policy work in recent years given sufficient attention to the possibility that we are developing new powerful factors in our economy which may modify the usual postwar behavior of prices? They may also modify greatly the usual business cycle over the next several decades. In his recent book, *Money, Debt, and Economic Activity*, A. G. Hart finds in the government's role of adjudicating conflict between the centers of great political-economic power—corporations, labor unions and organized agriculture—a strong and persistent inflationary pressure. Arguing that government price-wage policy is subject to claims from these three powerful groups, and that any controls of the prices of their particular commodities or services are very unpalatable to each, Hart contends that legislators will naturally look for the easy way out. This they will find to be in yielding a little to each group. "Farmers may want to see lower wages, but will always accept higher farm prices instead. Trade-unionists would like food cheaper, but can be consoled with higher wages. Businessmen would like both sets of prices lower, but are cheerful as long as they can add what they regard as suitable profit margins to the costs originating in wages and raw material prices. Thus, the politician has a perpetual temptation to please one group by helping its selling prices rise and then to compensate others by doing the same for them. The result is 'log-rolling inflation.' "[1]

Discussing the same general problem, Calvin B. Hoover writes, "With all organizations of claimants for shares of the national income demanding incomes higher than those which can be granted out of real national income, the temptation to grant everybody larger shares—and to depend upon reducing the shares to tolerable proportions through allowing rises in the general price level—becomes terrifically great."[2] This pressure, he contends, grows out of the political necessity of any party, either of the "left" or of the "right," to maintain reasonably "full employment" at any cost. Keynes found a "built in" tendency of the economy to over-save

[1] Hart, A. G., *Money, Debt, and Economic Activity*, Prentice-Hall, New York, 1948, p. 430.

[2] Hoover, Calvin B., "Keynes and the Economic System," *The Journal of Political Economy*, LVI, No. 5 (Oct. 1948) p. 401.

(in relation to investment) as the economy passed from the self-regulatory stage of effective competition to that of widespread corporate organization. But this unbalance is now in prospect of being reversed as a consequence of the increased proportion of total economic activity now being channelled through government. Not only are legislators naturally induced to pressure the price-level upward as a means of resolving industrial conflict, but also obliged, if they wish to stay in power, to overspend in relation to savings in order to maintain "full employment." The consequence: "the 'inflationary gap' is more likely to be a continuing problem for our present modified form of capitalism than is the (prewar) discrepancy between the propensity to save and the inducement to invest."[3] To the analyses of these two economists should, of course, be added the influences on our economy of our emphasized world leadership and the continuing "cold war."

Most long-term outlook and price policy proposals for agriculture have been fabricated upon a presumption of recurring periods of general deflation; their objectives have been principally to protect farmers against undue hardship during these periods. One wonders how long-time outlook statements should be modified and what kind of analyses and proposals in the price policy field would be appropriate should a future such as these two men foresee become a reality. One wonders also just how much exploring of this question has been done, just in case the conclusions of these men *might* be right!

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[3] *Ibid.*, p. 402.

LEGISLATION PASSED BY THE 81ST CONGRESS, 1ST SESSION

LAWS OF INTEREST TO AGRICULTURAL ECONOMISTS LISTED IN CHRONOLOGICAL ORDER

PUBLIC LAW 11 (S. 548) EXPORT CONTROL ACT OF 1949 (approved February 26, 1949). Continues export-control authority until June 30, 1951, or such earlier date as Congress or the President may determine. Provides that controls shall not be exercised on agricultural commodities during any period for which the

supply is determined by USDA to be in excess of domestic requirements.

Public Law 28 (H.R. 128) COTTON ACREAGE ALLOTMENTS (approved March 29, 1949). Amends the AAA Act of 1938 so as to provide that state, county, and farm acreage allotments and yields for cotton for any year after 1949 shall be computed without regard to yields or to the acreage planted to cotton in 1949.

Public Law 38 (H.R. 2101) RACC DISASTER LOANS (approved April 6, 1949). Abolishes the Regional Agricultural Credit Corporation and transfers its functions to the Secretary of Agriculture. Authorizes the Secretary to make loans to farmers and stockmen for any agricultural purpose in any area or region where he finds that a production disaster has caused a need for agricultural credit not readily available from other responsible sources.

Public Law 47 (S. 1209) ECA AUTHORIZATION (approved April 19, 1949). Among other things, provides that 12½ percent of wheat shipments from the United States shall be in the form of flour; amends the provision regarding surplus agricultural products so as to provide that a "class, type, or specification" of a commodity may be determined by the Secretary to be surplus.

Public Law 85 (S. 900) COMMODITY CREDIT CORPORATION CHARTER ACT AMENDMENTS (approved June 7, 1949). Amends the Commodity Credit Corporation Charter Act in the following respects: Returns CCC to the supervision and direction of the Secretary. Increases the number of members of the Board of Directors from five to seven. Provides that the Secretary serve as Chairman of the Board. Removes the limitation upon the appointment of directors who are otherwise employees of the Federal Government; provides for a bi-partisan advisory board of five members.

It permits the Corporation to acquire real property or any interest therein for the purpose of providing storage adequate to carry out effectively and efficiently any of the Corporation's programs.

Public Law 99 (H.R. 3181) WATER FACILITIES LOANS (approved June 10, 1949). Increases from $50,000 to $100,000 the monetary limitation on individual projects which may be undertaken under the Water Facilities Act of 1937.

Public Law 155 (H.R. 5240) FATS, OILS, RICE IMPORT CONTROLS (approved July 1, 1949). Amends the Second War Powers Act, 1942, so as to continue until July 1, 1950, the authority for exercis-

ing, administering, and enforcing of import controls with respect to fats and oils and rice and rice products.

Public Law 171 (S. 1070) HOUSING ACT OF 1949 (approved July 15, 1949). Authorizes the Secretary, through the Farmers Home Administration, to make loans, for a period up to 33 years and at not over 4 percent interest, to owners of adequate farms who are otherwise unable to finance safe and sanitary housing and other needed farm building improvements for themselves or others working on the farms. The loans will not require a first mortgage on the farm property and may be secured by the farmers' equity in the farms. Authorizes similar loans, supplemented by annual contributions, to owners whose farms are not presently adequate, but which may be brought to an adequate basis through a satisfactory program of enlargement. Authorizes combination loans and grants for minor improvements and repairs to farm dwellings and farm buildings, in order to make them sanitary and safe, on farms which are neither adequate nor potentially adequate. Title IV authorizes a program of technical research and studies on housing.

Public Law 268 (H.R. 3825) FEDERAL CROP INSURANCE ACT AMENDMENTS (approved August 25, 1949). Authorizes an increase each year in the number of counties in which insurance can be offered. Removes the clause requiring indemnities to be paid on a pro-rata reduced basis, beginning with the crop year 1950, when indemnities exceed premiums.

Public Law 272 (S. 1962) COTTON ACREAGE ALLOTMENTS AND MARKETING QUOTAS (approved August 29, 1949). Authorizes the proclamation of a national marketing quota for cotton whenever the total supply exceeds the normal supply, as defined in the act. Provides for the proclamation of a national acreage allotment which will produce the amount of the proclaimed quota. For 1950 and 1951 special provision is made for the distribution of the national acreage allotments to states and counties. Contains provisions relating to wheat and peanuts to provide for certain minimum farm wheat acreage allotments for 1950 and for a minimum national peanut acreage allotment for 1950 of 2,100,000 acres. Provision is also made for the apportionment of the national peanut acreage allotment in 1951, and thereafter, by increasing or decreasing 1950 state acreage allotments proportionately as the national allotment is increased or decreased.

Public Law 307 (H.R. 1211). TRADE AGREEMENTS (approved

September 26, 1949). Repeals the Trade Agreements Extension Act of 1948 and extends the Trade Agreements Act until June 12, 1951, in substantially the same form as before the 1948 amendments.

Public Law 352 (S. 2116) PUBLIC WORKS (approved October 13, 1949). Authorizes the appropriation of $100,000,000 for advances by GSA to the States for advance planning of non-Federal public works.

Public Law 348 (S.J. Res. 53) REFORESTATION AND REVEGETATION (approved October 11, 1949). Declares the policy of Congress to accelerate and provide a continuing basis for reforestation and revegetation of forest lands. Authorizes for reforestation and revegetation through the Forest Service appropriation of $4,500,000 for fiscal year 1951, increasing to $13,000,000 in 1955.

Public Law 361 (H.R. 2514) FINANCIAL ASSISTANCE TO HOMESTEAD ENTRYMEN (approved October 19, 1949). Permits the extension of loan assistance under the Bankhead-Jones Farm Tenant Act and the act of August 28, 1937, known as the Water Facilities Act, to persons who are acquiring farms by means of homestead entry on public lands or who are purchasing farms on reclamation projects, and who are otherwise eligible for such loans.

Acts Passed by Both Houses of Congress But Not Yet Signed by the President as of October 24, 1949

H.R. 2960. LOANS FOR RURAL TELEPHONES. Authorizes the Administrator of the Rural Electrification Administration to make loans for the purpose of financing the improvement, expansion, construction, acquisition, and operation of facilities to render telephone service in rural areas. The loans will bear interest at 2 percent and are subject to the same terms and conditions as loans made for rural electrification.

H.R. 4146. NATIONAL MILITARY ESTABLISHMENT APPROPRIATION FOR 1950. Carries the following provisions: That none of the funds appropriated in this title shall be used for the payment of any subsidy on agricultural or other products; the Secretary of the Army is authorized to purchase from the CCC any food products owned and stored by such Corporation which the Secretary determines to be of a satisfactory quality for the use of the Military Establishment, or for civilian feeding in occupied areas.

H.R. 2296. COOPERATIVE FORESTRY PROGRAMS BILL. Amends

the Clarke-McNary Act so as to increase funds for forest fire protection from $9,000,000 to $20,000,000 by successive yearly increases, and increases the yearly appropriation authorization for growing forest tree planting stock from $100,000 to $2,500,000 by successive annual increases; expands the Federal-State education program for small forest landowners by increasing the annual appropriation authorization to $500,000.

H.R. 5856—FAIR LABOR STANDARDS ACT OF 1949—Raises minimum wages of covered workers to 75 cents an hour.

H.R. 6305—INTERNATIONAL WHEAT AGREEMENT ACT OF 1949—The President is authorized, acting through the CCC, to make available or cause to be made available, such quantities of wheat and wheat flour and at such prices as are necessary to fulfill the obligations of the United States under the International Wheat Agreement of 1949.

H.R. 3699—FEDERAL LAND-BANK LOANS—Amends the Federal Farm Loan Act to authorize loans through National Farm-Loan Association in Puerto Rico, to increase the limitations on Federal Land-Bank loans to any one borrower from $50,000 to $100,000.

H.R. 5345—AGRICULTURAL ACT OF 1949—Provides price supports at 90 percent of parity if acreage allotments or quotas are in effect for basic commodities in 1950; at 80 to 90 percent in 1951; and 75 to 90 percent in 1952 and thereafter.

Whole milk, butterfat, and the products of such commodities are to be supported at between 75 percent and 90 percent of parity. Price supports for wool, including mohair, tung nuts, honey, and Irish potatoes are mandatory between 60 and 90 percent of parity. Price support for non-basic agricultural commodities, other than the designated commodities, is permissive at any level not in excess of 90 percent of parity.

The modernized parity formula contained in the Agricultural Act of 1948 is amended to include wartime subsidy payments and wages paid hired farm labor. However, in the case of the basic commodities, the use of the old parity price definition is required at any time during the four year period beginning January 1, 1950, if that price is higher than the modernized parity.

The Secretary is directed, so far as practicable, to announce the level of price support for field crops in advance of the planting season and for other agricultural commodities in advance of the beginning of the marketing year or season.

BOOK REVIEWS

Readings on Agricultural Policy, Edited by O. B. Jesness, Univ. of Minnesota: The Blakiston Co., Philadelphia. 1949. Pp. xi, 470, $4.50.

Readings on Agricultural Policy is a collection of previously published articles dealing with various phases of agricultural policy. A good job has been done. This book consists of twenty-three papers by twenty-one different individuals and eleven articles from committee reports. It is definitely not a textbook, but can be a valuable reference for students of economics and agricultural economics—especially those taking courses in agricultural policy.

The book is divided into four parts: (1) Background, (2) Price and Production Adjustments, (3) International Trade and Relations, (4) Land and Rural People. In a collection of published articles on closely related topics, there is naturally considerable repetition due to each writer presenting background material for his major points. No attempt will be made to evaluate or summarize the contents of the various articles.

Part 1 presents background material on agricultural policy. It contains five papers and takes up about one-eighth of the book. The first two papers contain fundamental material dealing with the relationship of agriculture to the national economy. The next deals with farm prosperity, followed by a paper on what farmers want. The concluding paper of this section stresses the importance of the general welfare approach in developing agricultural policy.

This section does not include a presentation on world agriculture, the nature of farming in other lands, the extent to which it is carried on by peasants, and the broad aspects of agricultural policy in other nations. A paper dealing with these broad aspects would be helpful in orienting the thinking of students studying our own agricultural policy.

Part 2, dealing with price and production adjustments, contains fifteen papers and takes up nearly one-half of the book. This section starts out with a history, written in sympathetic vein, of the development of agricultural policy since World War I. This is followed by a paper on the evolution of parity. Several of the papers in this section discuss various aspects of parity. Over half the articles in Part 2 were parts of reports on agricultural price policy by various committees, including the Committee on Postwar Agricultural Policy of the Association of Land Grant Colleges and Universities,

various committees of the Farm Economic Association, and the House Special Committee on Postwar Economic Policy and Planning of the seventy-ninth Congress. In the main, these reports deal with the general aspect of price and production policy. Other articles in this section present individual opinions on the fundamentals of a sound agricultural price policy and, in some cases, their suggested solutions to the problems involved.

The selection of papers to be included for this section was no doubt difficult in order to present a fair balance between those in the profession who have considerable faith in government programs and those who do not share this view. From an over-all point of view, this section might have been strengthened if more analysis had been presented on the demand approach—such things as the Stamp Plan, School Lunch, Relief Feeding, Animal Agriculture, and the like.

Part 3 contains five papers dealing with international trade and relations. It starts out with a paper on the United States and World Trade, which is followed by a discussion of reconciling agricultural and foreign trade policies. The remaining papers deal, to a considerable extent, with a proposed World Trade Board and with commodity agreements.

This section contains too much on commodity agreements and not enough on fundamentals of trade. There was not enough discussion on the place and responsibilities of the United States in foreign affairs, the dollar shortage, our need to develop imports, and the like. The editors had to select from things written. Here again, perhaps, is a case where too little has been written on fundamentals in proportion to writings on specific programs of action.

Part 4 deals with land and rural people. It contains nine papers. The need for a land policy was discussed, followed by a broad presentation dealing with our major land use problems, and a paper on issues in federal land management in the western states. The section contains papers on land tenure, problems of farm laborers and share croppers, the problems of southern agriculture and concludes with a presentation on rural living and social facilities.

Three things impressed the reviewer from reading these articles concurrently: First, most economists were too pessimistic on farm prices for the immediate postwar period. Second, most economists discuss and attack parity as if it were the actual price received by

farmers. History indicates that the market price received by farmers and the calculated parity price for a product are two different things. Third, there is almost uniform criticism of production control. Few, if any, point out its most glaring weakness; namely, "In most cases it didn't work." If, by controls, the price of corn had been stabilized at a "reasonable" level, perhaps many economic arguments would have been advanced for production controls.

Much could—and probably will be—written on what the editor should have included or omitted. Nothing is to be gained from such a procedure since the volume is already published and wise selections have been made. It is of some concern, however, that so little appeared in the *Readings on Agricultural Policy* on the role that research and education has played in the development of American agriculture. After all, the contribution of our national policy regarding agricultural education and research should not be overlooked.

Some of the articles are a little out of date due to the fact that postwar conditions are somewhat different than anticipated by the writers. The question might be raised if the Association's next step might be to attempt a "policy" book by inviting people to write chapters on definite and assigned topics for a joint publication.

This book, *Readings on Agricultural Policy*, is well worth reading by persons interested in any phase of public policy.

T. K. COWDEN

Michigan State College

The Consumer and the Economic Order, by Warren C. Waite and Ralph Cassady, Jr. New York: McGraw-Hill, 1949. Pp. x, 440. $4.50.

When this volume first appeared in 1939—a modernized and extended version of Professor Waite's *Economics of Consumption* published in 1928—its reception by reviewers was generally favorable. As a text to service the growing number of college courses which were attempting to approach economics from the consumers' point of view, there was much in the book to recommend it. It was systematic, the mild "welfare" tone offered something of an antidote to the producer oriented curricula of Schools of Business, and there was repeated considerable traditional analysis which students were likely to have missed or to have forgotten from the *Principles* course.

The present edition is not substantially changed. Statistical tables and institutional data have been brought up to date in so far as possible. Reliable information on the world cooperative movements mostly ends with 1939. Chapter VI, "Competition, Monopoly and the Consumer," has been expanded on the basis of the TNEC reports and certain other studies in this area. The over-all length, including the index, has been increased by 51 pages. Here and there the analysis has been tightened up to make space for some of the events that have crowded the last 10 years.

Thus, the virtues of the earlier edition are still present. But so are the shortcomings. And these latter are the more glaring in the light of changes that have taken place, not only in the *real world* but in economic thought as well. In their preface the authors note that, "The ten years that have passed since the first edition of this book have been a period of tremendous change. These changes have emphasized the deep concern of the consumer in the operation of the economic order." Yet, one is scarcely made aware what those changes are. The name of Keynes does not even appear in the index.

While considerable space is devoted to the effect of price changes on consumers, there is practically no mention of changing levels of national income as such. It is certainly very arguable that, despite an inordinate concern over prices and shortages, consumers generally (if such there be) have fared better during these past 10 years than they ever did before in any comparable period, despite the luxury of carrying on a war and supporting a sizeable portion of the European population. There is reason to doubt that, in a return to the "good old days" of low prices, they will fare as well in the next 10, but these doubts are not raised in the present book.

The role of savings is treated only as an aspect of the individual security problem. And on page 412, the following statement appears, "The saved funds are spent as surely as expenditures made by consumers on shoes or flour." Surely, no attempt to treat the "importance of consumers" can lay claim to adequacy if it ignores completely the "new economics." To argue that it is mistaken may be one thing; to act as though it had never happened quite another.

There is a fairly extended treatment of tariffs, but one looks in vain for a reference to FAO, to the employment act of 1946 and its implications—good or bad. Assuming there is no correct answer as to the significance of these matters of more recent concern, ought they not at least be discussed?

Finally, no mention is made of the work of Katona and his associates in the surveys of consumer intentions to spend, of their liquid holdings, and the other basic data being compiled under the sponsorship of the Federal Reserve Board. Even though this work is still in its infancy—having started in 1945—it does offer at the present time some prospect for injecting the fresh air of empiricism into economics, as well as an approach to greater cooperation among the social sciences.

ALVIN E. COONS

Ohio State University

Controlling Factors in Economic Development, Harold G. Moulton. Washington, D. C.: The Brookings Institution, 1949. Pp. viii, 397, $4.00.

This book is an analysis of "the factors which impede and restrict, and those which generate and promote, economic advancement." Because of the positive conclusions reached and since they represent the mature views of the head of one of the leading institutions of economic research, this study is a major contribution to the literature on economic progress.

Part I is an effort to draw lessons from the past. The remarkable increases in human productivity, population and standards of living since the early part of the 19th century are reviewed. The early classical economists did not foresee such advances because their analysis contemplated diminishing returns from capital with a consequent trend toward a static state. They overlooked two types of developments which have made it an exceedingly dynamic state in which the returns from capital have increased because of their steadily improving efficiency. One development has been improvements in science and technology. Such advances in agriculture, mining, creative chemistry, power, and size of enterprises have been revolutionary in their effect upon productive efficiency. These advances, however, have been facilitated by improvements in economic organization. The corporation, bank credit, and the development of stable fiscal and monetary systems have provided an environment in which free enterprisers could utilize these advances effectively.

Economic expansion, however, has not been unimpeded. It has been irregular partly because of recurring business depressions. The various explanations for these depressions are considered by

the author and the conclusion reached that each cycle has its own peculiarities and that "there is no single cause of economic disorders."

Another restricting factor is the difficulty of maintaining a market for what can be produced. Consumption is limited more by the lop-sided distribution of incomes than by traditional propensities to consume as explained by Keynes. Budget studies show that consumption increases with income though not proportionally. Concentration of income in a small percentage of consumers results in limited consumption for the masses, and high consumption and savings for the few. The rate of savings has not been the governing factor in the rates of capital formation and the ouput of consumer's goods. The restricting influences rather have been the amounts and distribution of income.

This approach holds no brief for the mature economy conception as developed in the discussions of the Temporary National Economic Committee. If the income pattern is right, consumption will not be held back by any fixed habits. Production will keep pace as consumption expands, The problems of disappearance of frontiers and stagnation of private investment have not materialized.

In Part II the look is forward. The author's first step in considering the future is to set up a series of major economic goals of the American people as follows:

1. A progressively larger total national income
2. A progressively wider division of national income
3. A society in which individual rewards are based primarily on work performed
4. Increasing economic security
5. Greatest possible development of the capacities of every individual
6. Opportunity for every capable individual to earn his own income

A free enterprise system, with the government exercising appropriate regulatory and control functions, is found to be the environment most conducive to achieving these goals. Full development cannot be attained under communism, State socialism, or a hybrid arrangement.

He then raises the question whether so far as natural resources and productive capacity are concerned, the United States within 100 years might support a population double that of the present

on a plane of living eight times as high as the present. Assuming a distribution of income similar to the present, this would involve multiplying expenditures for food and nutrition about eight times, shelter and home maintenance sixteen times, and similar but higher increases for other categories of expenditures. While not inconsistent with past trends, these assumed rates were established somewhat arbitrarily for the sole purpose of testing "the adequacy of basic resources by setting a very high goal." He examines the resources for each category and concludes that *as potentials* they are reasonable.

In the case of food and nutrition, the eight-fold increase involves tripling the food supply and accounting for the balance in improved quality and diversity of foods and higher processing and servicing costs. The tripling of the food supply can be brought about by reclamation, conservation, improvements of varieties and production methods, use of more fertilizers, soil-less food production, and other similar developments. Some agricultural scientists may question the feasibility of tripling the food output in the United states, even though it only involves continuing for 100 years the actual rates of increase during the last 25 years. What may be more startling, however, is his statement that such expansion would not involve diminishing returns.

Certain conditions must prevail, of course, if such potentials are to be realized. (1) Natural resources must be used efficiently. (2) Productivity per man-hour must continue to rise. This involves adequate incentives so that improved technology will be encouraged. (3) Large scale enterprises must be permitted. (4) Monetary and fiscal stability must be maintained. (5) There must be progressive expansion of mass purchasing power.

The latter requirement can be attained most effectively by transmitting the benefits of increasing efficiency through price reductions. This diffuses the benefits to all classes of consumers. If prices are maintained by support programs, wage increases or high profits, the benefits are confined to certain groups. Future markets thus may be narrowed because millions of other consumers actually may suffer a loss in purchasing power. The increasing competition of groups for economic power makes the problem of diffusing purchasing power to the masses more difficult.

The retarding effect of business depressions upon economic progress can be mitigated but not eliminated, in his opinion. A final requirement is peace and international stability. Under such

conditions, economic progress can be achieved throughout the world through the same principles as outlined for the United States.

Few of the ideas and data in this book are new. The basic philosophy was presented in four earlier studies of Brookings Institution: *America's Capacity to Produce*, 1934; *America's Capacity to Consume*, 1934; *The Formation of Capital*, 1935; and *Income and Economic Progress*, 1935. Various points also have been included in other publications of the author and of Brookings Institution. It should be recognized also that some of the findings have been the subject of controversial discussion among economists.

The merit of this book is that it brings together in compact form a well-rounded theory of economic progress, supported by long years of research and study. This experience is reflected also in the clear, forceful style, and logical sequence in the presentation of the material.

R. C. ENGBERG

Farm Credit Administration

Commodity Exchanges and Futures Trading, Julius B. Baer and Olin Glenn Saxon. New York: Harper and Brothers, 1949. Pp. xii, 324. $5.00.

Following very closely the treatment in *Commodity Exchanges* (Baer and Woodruff, 1935), of which this edition is a revision, the subject of futures markets and exchange operations is broken down into four major categories: historical development, organization and marketing functions, speculation and hedging, and the legal aspects of contracts, clearing houses and the Commodity Exchange Act.

The material relating to the law and organization of commodity exchanges and clearing houses and the discussion of the Commodity Exchange Act is well organized and reflects a first-hand experience of long standing with the technical-legal workings of the exchanges. Throughout the entire book, moreover, the authors have managed to convey their ideas in a simple, almost popular style—a difficult feat to accomplish when applied to such controversial and technical subject-matter.

The handling of the economic aspects of futures market operations perhaps overemphasizes the role of the exchanges insofar as they are presented as being "vital to a free economy"; at the same time, the book underemphasizes the limitations and abuses of futures trading operations. While the authors did not intend to

undertake "an extensive analytical or theoretical treatise . . . ", questions relating to the benefits of speculation, the extent of price manipulation and price determination, and similar questions touched on in this book require just such treatment before valid and reliable answers can be obtained. No original analytical contributions have been made by the authors and the scanty quantitative analyses which are presented are based on data referring to pre-War I conditions and, in some cases, to conditions before the turn of the century. No indication is given, moreover, that the authors have considered the statistical data which have become available since 1935 or the more recent advances in economic theory which do not lean so heavily on purely competitive assumptions. This book would have given a more balanced economic presentation had it incorporated the more recent analyses to be found in such publications, among others, as: Blau, G. "Some Aspects of the Theory of Futures Trading," *Review of Economic Studies*, 1944–45; Howell, L. D., "Analysis of Hedging and Other Operations in Grain Futures," United States Department of Agriculture, 1948; Keynes, J. M., "The Policy of Government Storage of Foodstuffs and Raw Materials," *Economic Journal*, 1938; Irwin, H. S., "Middlemen's Accumulations and Expectations in Marketing Farm Products," this Journal, 1947; Hoffman, G. W., "Grain Prices and the Futures Market—A Fifteen Year Survey, 1923–1938," United States Department of Agriculture, 1941; and Lerner, A. P., *Economics of Control*, 1946, Chapter 8—"Competitive Speculation." These references in their respective order have been chosen at random to cover one or another point at issue but not discussed as such in the book—the difference between the insurance principle and risk bearing on commodity exchanges, the extent to which hedging is not a perfect risk bearing device, the relation of futures markets to market concentration and accumulation, types of abnormal price and market conditions, and the concept of counter-speculation.

While a descriptive treatment of the existing institutional workings of the exchanges does not necessarily require it, the economic analysis would be more meaningful if some consideration had been given to a comparison of the relative merits of the integrated firm, various systems of forward pricing, and other alternatives to the futures markets as a means of transferring or reducing risks in the marketing of agricultural commodities.

HERMAN L. MYERS

Bureau of Agricultural Economics

Agriculture and Industrialization: The Adjustments That Take Place as an Agricultural Country Is Industrialized, Pei-kang Chang. Cambridge: Harvard University Press, 1949. Pp. xiv, 270. $5.00

In this book the author, Professor of economics at Wuhan University, seeks to examine the theoretical, empirical and historical aspects of "the adjustments between agriculture and industry during the process of industrialization" with particular attention to the adjustments within agriculture itself (p. 1). At the outset he proposes four questions for special study: (1) Is industrial development a necessary or a sufficient condition for agricultural reform in a densely populated rural region, or *vice versa*? (2) Is it possible to maintain a balance between agriculture and industry within a given country? (3) Is it possible to maintain harmonies and mutually beneficial relations between countries primarily agricultural and those essentially industrial? (4) What are the particularly pressing problems which would most probably confront an agricultural country during its process of industrialization?

In answering these highly important and ambitious questions within the rather modest length of this book, Professor Chang's principal contribution proves to be largely that of summarizing and synthesizing the many-sided literature of the field. His bibliography is extensive and will be helpful to all who are interested in problems of industrialization and economic progress. He makes clear that so broad an analysis must depend upon the whole gamut of economic theory—general- and partial-equilibrium, imperfect competition, location, production, national income, business cycles, capitalist development, and interregional and international trade. That he is able to review rather satisfactorily so great a range of theoretical literature and to indicate, in each case, its relevance to his problem is an impressive demonstration of his comprehensive economic training and his professional versatility. However, the over-all result is unfortunately an excess of superficiality and pedantry. For example, is it still necessary to define at length such concepts as the price and income elasticities of demand and the elasticity of substitution (pp. 30–36 and 131)? The theoretical and empirical parts of the book—neither of which demonstrates much originality on the author's part—are not very well integrated. The empirical data, for the most part, will be familiar to most American readers, either because they describe well-known trends within the United States or because they are from such standard international sources as Colin Clark's investigations.

Several errors might be noted. The first footnote on Page 66 incorrectly expresses the mathematical forms of the "Cobb-Douglas formula." On Page 120 (line 9 et seq.) the analysis of the initial effects of a technological improvement upon the perfectly-competitive firms first adopting it (Fig. 3) is wrong in supposing that these firms' sales would be limited to the old equilibrium volume OA. Instead, taking the new (lower) marginal-cost curve into account, their output would for a time exceed even the new long-run equilibrium volume OB. Finally, it surely cannot be true (pp. 211–12) that " . . . the prices of the [Danish] exports of agricultural products have been relatively unaffected by cyclical fluctuations of business. . . . "

The most original and interesting part of Professor Chang's book is Chapter VI, in which he briefly applies his analysis to Chinese industrialization. Having now clearly shown his broad knowledge of the general theoretical and empirical literature of his field, Professor Chang should be encouraged to devote his future research efforts to an expansion of his investigations of the problems of industrializing his own important country. Economists throughout the world would await his findings in this area with great interest and anticipation.

WILLIAM H. NICHOLLS

Vanderbilt University

The Economic Problems of Forestry in the Appalachian Region, William A. Duerr. Cambridge: Harvard University Press, 1949. Pp. x, 308. $5.00.

The five states of Kentucky, North Carolina, Tennessee, Virginia and West Virginia are chosen to represent the Appalachian Region. The total area included in these five states is then subdivided into five "physiographic" provinces as follows: (1) Coastal Plain, (2) Piedmont, (3) Highlands, (4) Great Valley and (5) Interior province. The author also calls these provinces "forestry" provinces, "not because they have been delineated with special reference to the forestry situation, but because they are believed to conform in general to the broad geographic pattern of forestry conditions in the region and will be used in describing and analyzing these conditions."

The first chapter of the book contains a scholarly discussion of many economic and social data summarized according to the above-

named forest provinces. Anyone interested in this arrangement of data will find this chapter helpful.

The second chapter deals with problems of people and the land, with special emphasis on the people of the Highlands and the Piedmont. More use is made of state data. The significance of custom and tradition is emphasized.

The third chapter is concerned with problems of forest-land management such as ownership, tax-delinquency, taxation, fire, etc. The fourth chapter discusses timber management practices and the economic characteristics of timber as a crop.

The next five chapters are devoted to marketing problems. In the opinion of this reviewer, the most interesting chapter in the book is Chapter VII, which describes problems in marketing pulpwood. The discussion of the "contractor system" and its abuses reads like the work of one who knows what he is writing about.

The book ends with a chapter on the consumption of forest products in which a plan for the consumption of forest products is identified with a plan for harvesting. Estimates of growth and drain of timber are given. The key idea that gives form to this chapter is the notion that "It is necessary to compare consumption, not with standing timber, but with the ideal consumption under some rational plan, before it can be ascertained whether problems exist." A balance between growth and drain seems to be the ideal or rational plan.

Among the many ideas the reader will get from this book, two are especially significant: (1) the large percentage of total forest products represented by fuel wood, and (2) the preponderance of farm and other small private holdings of forest land.

As the story unfolds, the use made of the physiographic or forest provinces becomes progressively less; and unless one has read the preface and the 27 pages of introductory material, he might begin to wonder whether the purpose of the volume was merely to discuss the economic problems of forestry in the Appalachian region as the title suggests.

Much of this introductory material undoubtedly helped the author in his very practical problem of working out requirements for the Ph.D. at Harvard, but so far as the public is concerned the book would have been much better if it had begun with Chapter I and had omitted all the confusion about the definition of economics and the field of forest economics. The hedonistic or pleasure-pain

conception of economics is only one view; and the notion of economics as a "link between things and people" rather than as relations between people and people leaves much to be desired. Just why engineering is classed as a "naturalistic" science is left unexplained.

If the book is to be regarded as "a definition of forestry economics" rather than mainly as a discussion of some of the economic problems of private forestry in the Appalachian region, the author has given too little attention to the public economics of forestry. Although public forestry is mentioned, and even though it is conceded that public and private interests in forest land management may not always be in harmony, little use is made of these observations to give public ownership and management of forest lands, as well as public regulation of privately owned forests an increasingly important place in a "rational plan."

Various passages in the book show the author to be no blind devotee of rampant free enterprise, but he has not given sufficient emphasis to the fact that forestry economics includes public action to deal with the anti-social consequences of forest land ownership in fee simple—consequences he clearly recognized.

BUSHROD W. ALLIN

Bureau of Agricultural Economics

The United States International Timber Trade in the Pacific Area, Ivan M. Elchibegoff. Stanford: Stanford University Press, 1949. Pp. xvii, 302. $7.50.

At this stage in world history when the United States is shifting into a dominant international role, and our foreign trade position is a matter of great importance, exports and imports of timber take on a new significance; particularly when our supplies of exportable timber are shrinking and dollar-short nations hope to pay for some of their purchases here with raw or semi-manufactured forest products. Dr. I. M. Elchibegoff's contribution on timber trade in the Pacific is particularly timely.

Although timber has not been a large part of the Pacific foreign trade in terms of dollar value (14.3 percent), it is significant that slightly more than 50 percent of the shipping space in 1936 was utilized by forest products. The author points out further that the 26 countries in the Pacific area exported a total of 3.8 billion board feet of logs and lumber while importing 2.9 billion feet. A surplus

for shipment outside of the Pacific zone was thus made avaliable.

This book is divided into three parts, the first of which deals with introductory material and definitions. Trade terminology and the classes of woods are discussed in terms of supply and demand by each nation in the Pacific area. Significance of the timber trade in relation to all world trade is treated in considerable detail.

Part Two deals with the forest resources both in terms of supply and past production of each of the 26 forested nations bordering the Pacific. Separate chapters complete with tables, not only cover the forest areas and resulting products therefrom, but also population and agricultural statistics. Maps showing the distribution of each forest area are included. Dr. Elchibegoff has drawn his data from all readily available sources—much of which is especially sketchy because adequate forest inventories have never been undertaken; or they are incomplete and partially available. Some are held in secret. The author has brought together under one cover some very revealing data on the Pacific forests of the U.S.S.R. as well as Manchuria. This volume will serve as a ready reference on the forest statistics for all countries bordering the Pacific along with such material as is presently available through FAO. A useful addition would be a general map of the Pacific area as a means of orienting the reader to the individual maps shown for each nation.

A great many tables covering population, crop production, land use, etc. are included both in Part Two and in the Appendix. Other than the fact that these serve as a basis for determining available labor supply and internal consumption of forest products, their significance to foreign trade is not made entirely clear. So much of this sort of material is included as to obscure the really important facts which can be gained from the population-resource ratios.

In Part Three the author undertakes to analyze and assess the implication of each nation's foreign trade policies and economic factors influencing trade. Technical trends in wood uses come in for examination, particularly in relation to the pulp and paper industry of the United States and Japan. Production costs, prices and transportation factors in the United States are treated descriptively, but unfortunately very little comparable data have been presented for other nations. In the case of tariff policies and their effect on the volume of import and export trade, better comparisons are presented for the major trading countries. For example, the disastrous effect of the Hawley-Smoot Act of 1930 on United,

States West Coast lumber exports is demonstrated in the greater than proportional drop in volume which the Reciprocal Trade Agreements failed to restore.

Since the beginning of World War II the United States has been a net importer of lumber—a drastic shift in our historical position. Unfortunately, the author fails to probe this situation in the detail it warrants, particularly since stumpage supplies available for future export are no longer abundant. The West Coast of the United States has always consumed a large quantity of imported tropical hardwoods. With an increasing shortage of high grade North American furniture woods the opportunities for greater importation from the tropics are opening up. Peeler logs used by the West Coast plywood industry are likewise in short supply due to timber depletion. Opportunities for importation of large tropical logs for this purpose are present, and one wishes the author had placed more emphasis on these shifts which are already in the wind.

Except for a few technical errors this volume can be criticized principally for its limited scope rather than content itself. One looks in vain for some treatment of the structure and institutions actually performing the foreign trade in timber products. Answers to such questions as profit margins or brokerage commissions and distribution and uses of product are not treated. Although the author treats most of the Pacific countries in as great detail as data permits, huge forest areas such as New Guinea and the large island groups of the South Pacific are not covered.

Perhaps too much emphasis is given to the fact that the United States has been an exporter of softwood lumber in the past. Development of new chemically derived products from wood in addition to paper is in the offing and it is conceivable that this may become a far more important item than it is possible to forecast at present. Nevertheless, lumber requirements both for repair of war damage and improving housing standards will comprise the great bulk of demand for timber in the foreseeable future, as the author points out.

Several minor technical errors in the use of the term "sulfite" in place of "sulfate" (p. 194) and *vice versa* on page 198 change considerably the implication of the author's forecasts in relation to the Southern and Alaskan pulp industries. This reviewer finds it difficult to believe that plant expansion in these two regions will supplant imports of duty-free Canadian newsprint. The power

of the press will continue to be exerted in behalf of duty-free imported newsprint in the future as it has in the past. Nowhere in the Continental United States and only in limited Alaskan areas is it possible to find the combination of spruce and abundant water power needed to make a large expansion in newsprint production. Canada holds the key to this situation.

Although the author has carefully stayed within the limits of the traditional pattern of foreign trade as it has been carried on within the past, a very useful purpose would be served if he had indulged in some quantitative forecasting. Two factors which are already beginning to show themselves could change foreign trade relationships considerably. Political stability in China under almost any conceivable regime will very probably result in a very slight improvement in living standards, if only because less energy is spent in war. This slight rise would reflect itself in an increased demand for housing and hence lumber of very large proportions.

The other unknown, of course, is Russia's entry into foreign trade on a much larger scale than at present. Elchibegoff's data on Russian Pacific timber supplies show some very large quantities available. If these are made available to the world market very considerable shifts in past trade trends would take place. Both of these prognostications depend upon shifting political winds which are very difficult to forecast. Yet the large potential demand and supply areas can be measured quantitatively and their effect evaluated if they should become active participants in foreign trade. Although prognostications of this nature could never be made with any degree of finality they would serve the useful purpose of preparing policy-makers with a set of alternatives which could develop in the future. It would thus enable the United States and other nations in the world to adapt themselves to the various eventualities which actually will develop.

Elchibegoff has made a useful contribution to forest economics literature. He has assembled material from nearly every available source and focussed it into an important trade area. Since forestry literature is almost wholly lacking in texts on foreign trade in forest products, this book will be welcomed as a distinct contribution to the field and will find considerable demand by students, teachers, economists and persons engaged in international trade.

CHARLES H. STODDARD

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Theories of Welfare Economics, Hla Myint. Cambridge: Harvard University Press (for the London School of Economics and Political Science), 1948. Pp. xiv, 240. $4.00.

This book does more than its title suggests. It contains both a clear, concise summary of modern welfare economics and a refreshingly accurate interpretation of classical economics. It is a history of economic thought that rightly devotes more than half its pages to the period since John Stuart Mill. It defines welfare economics at once so broadly as to include the main body of all economic theory, and so narrowly as to exclude (because it involves unscientific interpersonal comparisons of utility) the problem of the distribution of personal incomes. The book is a critical summary of each major theoretical system that deals with increasing welfare through production and exchange.

In Part I, "Physical Level," Professor Myint views the classical writers. Their primary concern was not the allocation of given resources (this view is a "theoretical anthropomorphism" of the modern day), but increasing the total physical output by raising the physical productivity of labor and expanding the total volume of economic activity. Hence their dynamic laws of population and capital accumulation. Free Competition was intended to promote dynamic expansion by giving free rein to individual initiative (quite different from today's pure and perfect competition, intended to secure allocative efficiency).

The great controversy between Malthus and the Ricardians over the balance of production and consumption here assumes its rightful place. Professor Myint has a brilliant analysis of the measure of value problem. This neglected element in classical economics was an integral part of the Glut controversy. Keynes' measurement of the national income in wage-units is, after all, the equivalent of Malthus' use of labor commanded. Second only to this as a specific contribution is his sympathetic interpretation of Productive Labour.

On details of interpretation there are bound to be differences of opinion. Not seeking a typical case, let me pause with Malthus. Professor Myint's generally excellent treatment is based on the second edition of Malthus' *Principles*. Reference to the first edition would have shown that Malthus' use of the intensity of demand was independent of (and prior to) Senior's "path-breaking work" on marginal utility (*cf.* Myint, p. 36). Furthermore, Malthus' *Measure*

of Value (1823) shows that the distinction between "extrinsic" and "intrinsic" value was not borrowed from Senior. Only the labels were borrowed (*cf.* Myint, p. 38). Again, Malthus' emphasis on the "intensity of demand" did not reduce entirely to purchasing power, for he stressed the *will* as well as the power to purchase, and emphasized that the maintenance of effective demand required that the commodities produced be suited to the tastes of consumers (*cf.* Myint, pp. 37–38, 64).

Part II, "Subjective Level," concerns the marginalist writers. Allocation of resources, in the full sense of adaptation of products to consumers' wants, is now the dominant theme. Diminishing marginal utility or substitutability replaces the assumption that quantities of welfare are roughly proportional to quantities of physical products, while given resources are assumed rather than augmentable ones.

There are excellent brief summaries of the General Equilibrium school, with their general optimum defined in terms of equality between subjective and technical marginal rates of substitution, and the English Neo-classical school, with their stress on exceptions to the principle of competition and their techniques of surplus analysis and comparison of marginal social product with marginal private product. Each type of analysis has its place, Professor Myint feels, but the surplus analysis promises most for practical use.

Part III, "Ethical Level," considers those criticisms of conventional theory that object to its assumption of constant wants. Yet conventional theory remains useful, Professor Myint believes: consumers' demand is relatively stable at any given moment of time and scientific impartiality must be sought. However, the broader problems of general social welfare on the ethical level cannot be ignored. We must make value judgments when dealing with practical social policy, but we should do it consciously and deliberately.

VICTOR E. SMITH

Michigan State College

Grass Silage and Dairying, Ray W. Ingham in Association with Willis A. King, Walter C. Russell and Carl B. Bender, New Brunswick, Rutgers University Press, 1949. Pp. vii, 88.

The New Jersey Agricultural Experiment Station has been one

of the pioneers in grass silage research, especially in its chemical and engineering aspects, since the early 30's. The brief volume under review covers, among other things, the results of a five-year feeding study carried out by the Station with partial support from the Herman Frasch Foundation for Chemical Research. It purports to present to "the less specialized reader" a "clear and balanced picture of the nutrient values of the more familiar grass silages and the effects of those silages on the milking cow and her output."

It does present some useful data on feeding value, and physiological effects of silages of (1) molasses-alfalfa vs. phosphoric acid-alfalfa, (2) molasses-oats vs. phosphoric acid-oats, (3) molasses-soybean vs. corn meal-soy bean, (4) molasses-grass vs. ground barley-timothy, (5) molasses-timothy vs. ground barley-timothy. In all of these tests cows were matched for productive ability, and corn silage was used as the control.

The authors follow a line of reasoning apparently designed to prove that dairy farmers throughout the humid part of the country should put up grass silage, and preserve it with molasses. Barn drying is dismissed with a single sentence: "Although in mow cured hay they [nutrient losses] are much less, the cost of special equipment . . . can be prohibitive." (p. 17)

Corn meal used as a preservative, while showing up well in production is not favored because " . . . ground grains are expensive in some sections, especially when, as is often the case, they must be applied at the rate of from 200 to 250 pounds to the ton." (p. 64) Value of nutrients added is not mentioned.

Field wilting is eliminated because " '65 per cent' of included moisture is extremely difficult to gauge. Only the most experienced operator can be reasonably certain that the crop has dried just that far and no farther." The reviewer was not aware that good results by the wilting method required exactly 65 per cent moisture; he is under the impression that about 60 to 68 per cent is the permissible or optimum moisture content. A recent survey indicates that about 85 per cent of Wisconsin farmers who wilted their grass silage and did not use a preservative produced "good" or "excellent" silage.

It is unfortunate that the comparative cost data given includes nothing on field forage harvesters. There is good reason to doubt whether, without a bigger cost advantage in favor of grass silage than appears to exist, the practice of ensiling grasses by stationary

chopper will ever become general. There are too many headaches and backaches.

This small volume is already out of date as a result of the rapid adoption of the field forage harvester and the "wilting method" of making grass silage.

EDWARD J. SMITH

University of Wisconsin

NOTE TO THE MEMBERSHIP

In order to keep expenditures in line with income the Executive Committee instructed the Editor to limit the Proceedings (Part II of this issue) to 400 pages and the total size of the annual volume including four regular issues and one Proceedings Supplement to 1200 pages.

Papers at the Laramie meetings have been shortened considerably, yet the Proceedings are in excess of the limit set. Authors have been most cooperative.

The editor requests that you review the Proceedings in some detail and comment on the following:

1. Should the printing of full length papers be limited to those presented at the general meetings with only a digest printed of the papers and discussion at each of the sectional meetings?

2. Should dues be raised and all the material presented at the annual meetings be printed?

3. Should the same procedure be followed next year with more severe cutting, or should authors be given rigid limits at the time they are invited to prepare papers?

PUBLICATIONS RECEIVED

American Country Life Association, "Rural Ideas and Rural Policies," Proceedings of the Twenty-sixth and Twenty-seventh Conference, 1947 and 1948, published 1949.

Bloom, Leonard, and Riemer, Ruth, "Removal and Return—The Socio-Economic Effects of the War on Japanese Americans," Berkeley: University of California Press. Pp. x, 259. $3.75.

Food and Agricultural Organization of the United Nations, "Yearbook of Food and Agricultural Statistics," Volume I, Production, 1948, Washington, D. C., 1949. Pp. xviii, 285. $3.50.

*Jesness, O. B., Editor, "Readings in Agricultural Policy," Philadelphia: Blakiston, August, 1949. Pp. xi, 420. $4.75.

Landis, Benson Y., "Rural Welfare Services," Morningside Heights, New York: Columbia University Press, 1949. Pp. viii, 201. $3.00.

Meade, J. E., "Planning and the Price Mechanism," New York: Macmillan Company, 1949. Pp. xiv, 130. $2.00.

*Moulton, H. G., "Controlling Factors in Economic Development," Washington, D. C.: Brookings Institution, 1949. $4.00.

*Myint, Hla, "Theories of Welfare Economics," Cambridge, Massachusetts: Harvard University Press, 1948. $4.00.

Rothmann, S. C., Editor, "Constructive Uses of Atomic Energy," New York: Harper and Brothers. Pp. ix, 258. $3.00.

Somers, Harold M., "Public Finance and National Income," Philadelphia: Blakiston, 1949. Pp. xii, 540.

Sykes, Friend, "Humus and the Farmer," Emmaus, Pa: Rodale Press, 1949. Pp. xxi, 392. $4.50.

United Nations, Department of Economic Affairs, "Economic Survey of Asia and the Far East, 1948," Lake Success, New York, 1949. Pp. xviii, 289. $2.00.

*Waite, Warren C., and Cassady, Ralph Jr., "The Consumer and The Economic Order," New York: McGraw-Hill Book Company, Incorporated, 1949. 2nd edition, pp. x, 440. $4.50.

* Reviewed in this issue.

NEWS NOTES

T. A. Adams, University of Vermont, was elected President, and J. L. Tennant, Rhode Island State College, Secretary of the New England Institute of Cooperation at the annual meeting, June, 1949.

C. E. Allred, University of Tennessee, has been elected Chairman of the Marketing Section, Association of Southern Agricultural Workers.

George H. Aull, Clemson College, L. P. Gabbard, Texas A. & M. College and J. F. Timmons, Iowa State College were U. S. Delegates to the recent United Nations Scientific Conference on the Conservation and Utilization of Resources, Lake Success.

R. C. Ashby, who has completed 23 years of service at the University of Illinois, has retired. He has accepted a position in the livestock marketing field at Morningside College, Sioux City, Iowa.

Kenneth L. Bachman, Division of Farm Management and Costs, BAE, was made chairman of a Commission of specialists organized by the Army to visit the Ryukyu Islands and report on their potential production. The party left September 14 and expected to work for about two months.

Merton B. Badenhop returned to the Agricultural Economics staff at the University of Tennessee, July 1, after having spent a year in graduate study at Purdue.

Ralph L. Baker, who recently received his Ph.D. in poultry marketing, has been promoted to Associate Professor in economics at Iowa State College.

W. L. Barr has completed his Ph.D. at Cornell and returned to his position as Associate Professor of farm management at Pennsylvania State College.

Russell L. Berry has been appointed Assistant Professor, Agricultural Economics, South Dakota State College. He will do farm management research and teaching.

Warren Bilkey has been appointed Assistant Professor at the University of Connecticut.

Robert Branson, on leave from BAE is making a study of food marketing problems in Puerto Rico.

Ronald Bird joined the staff of the Department of Agricultural Economics, West Virginia, as a joint employee with the Bureau of Agricultural Economics and is engaged in egg marketing research.

Ayres Brinser, recently Economist with the Federal Reserve Bank of Boston, has been appointed Research Associate on a study of wartime rationing under the direction of Dr. Galbraith, Harvard.

Lauren H. Brown has returned to Michigan State College after a year of work with the Halderman Farm Management Service.

Daniel W. Burch has joined the Division of Agricultural Finance of BAE to work in the field of farm taxation and local government.

Glenn L. Burrows, who has been working under Hotelling at the University of North Carolina on research in multi-variant analysis, has been appointed statistical consultant for BAE to work on special problems of mathematical statistics.

Alvin G. Carpenter, Utah State Agricultural College, has been granted a leave of absence for a year for graduate study at Cornell.

Albert Conley has accepted an appointment as Associate Professor of Agricultural Economics, University of Missouri. He fills the vacancy created when Dr. E. H. Matzen accepted an appointment with the Farm Credit Administration, Washington.

Samuel L. Crockett has transferred from the Division of Land Economics, BAE, to the Loan and Purchase Division, PMA.

Samuel A. Dum joined the Agricultural Economics staff at the University of Delaware July 1, 1949 after completing his doctorate at Purdue.

Worley S. Earp and Ocie Coston have transferred from the Division of Statistical and Historical Research, BAE, to the Cotton Branch of the PMA.

Harold H. Ellis has joined the Washington staff of the Division of Land Economics, BAE. He will work on the legal aspects of land tenure.

Ernest Feder has been appointed Assistant Economist and Assistant Professor, Agricultural Economics, South Dakota State College.

V. B. Fielder, Associate Professor, University of Arkansas, taught a graduate course in Land Economics during summer school at the Agricultural Mechanical and Normal College, Pine Bluff, Arkansas.

G. W. Forster, Head of the Department of Agricultural Economics at North Carolina State College since September, 1923 will devote full time to research and teaching, effective April 1, 1950. Professor H. Brooks James, a member of the staff, has been selected as his successor. At present Professor James has been granted a six months' leave of absence to study work in agricultural economics now under way at leading institutions of the nation.

Lowell N. George, formerly at the University of Illinois, has been made head of the Department of Economics and Business Administration at Muskingum College, New Concord, Ohio.

James R. Gray has joined the Division of Farm Management and Costs, BAE, after a year of graduate work at Utah State Agricultural College, to carry on the study of family operated cattle and sheep ranches in the Northern Great Plains. Arthur Roth, who has been engaged in that study for more than a year resigned to enter private employment October 1.

Among those doing graduate work at Harvard University this year are: William Drummond, Head of the Department of Agricultural Economics at Ontario Agricultural College; Director R. B. Tootell, State Agricultural Extension Service of Montana; Miss Maurine Hearn, Director of Women's Extension Work, Texas; W. N. Williamson, District Extension Supervisor, Lubbock, Texas; W. A. Henry, University of Connecticut; Glen Barton, Maxwell Klayman and J. W. Birkhead, on leave from BAE; John Blackmore, on leave from TVA; Dorris Brown, University of Missouri; John Sharp, University of Tennessee, and M. N. Williamson, Texas A. & M.

Earl O. Heady has been promoted to full professor at Iowa State College.

William F. Henry of the University of Connecticut has been granted a leave of absence for advanced study at Harvard.

T. A. Hieronymus has been promoted to Assistant Professor in Agricultural Economics, University of Illinois.

E. B. Hill, Michigan State College, will spend the fall term working with the North Central Land Tenure Committee and the Farm Foundation. He and Marshall Harris will be preparing a regional manuscript on father-son farm partnerships and succession in farming.

Leo M. Hoover is on leave of absence from Kansas State College working at Harvard University on the Ferguson Foundation research project in farm labor.

R. R. Hudelson, Associate Dean, College of Agriculture, University of Illinois, accepted a summer assignment in an agricultural advisory capacity in the British zone in Germany.

Charles D. Hyson has accepted a post as Economist for the ECA and will be stationed at Oslo, Norway.

H. B. James, North Carolina State College, taught a course in Farm management as a visiting professor at the University of Arkansas during summer school.

Hugh A. Johnson left the BAE Division of Farm Management and Costs in June to head up economic research work in Alaska and is now stationed at Palmer.

Lloyd E. Jones has transferred from the Division of Farm Management and Costs, BAE, to the Underwriting Division, Federal Crop Insurance Corporation, Washington, D. C.

W. E. Koepper returned to his duties as Professor of Agricultural Economics, Pennsylvania State College July 1. During the last year he has worked on coffee farm management research in Costa Rica and Colombia.

Karl S. Landstrom, formerly Agricultural Economist, BAE, Portland, Oregon, is now Chief of the Division of Land Planning, Region I, Bureau of Land Management, with headquarters at Portland.

Donald Larimore, a graduate student at Harvard University during the past three years, has accepted an appointment as Economist with the ECA and will be stationed at the Paris office.

Adrian H. Lindsey was granted a leave of absence from the University of Massachusetts for the Spring semester of 1949 and spent it in study at the Giannini Foundation of Agricultural Economics, University of California.

Milton L. Manuel has been appointed Associate Professor of Cooperative Marketing, Kansas State College. He has been doing graduate work at the University of Minnesota.

H. J. Meenen has accepted a position as Assistant Professor, Department of Rural Economics, University of Arkansas.

Frank Miller of the University of Nebraska has joined the staff of the Agricultural Economics Department at the University of Missouri as Professor of Agricultural Economics to work in the field of Land Economics. Dr. Miller is taking the vacancy created when Dr. C. H. Hammar resigned to work in the Food and Agriculture section of the Army of Occupation in Germany.

Alexander J. Morin has accepted a position as Chairman of the Department of Economics and Business Administration at Fisk University, Nashville.

William Morgan, formerly of Texas A & M, recently in the Paris office of ECA, became President of Colorado A & M on Oct. 1.

M. L. Mosher, University of Illinois, was given special recognition by the U.S.D.A. for his long service and contributions to the field of farm management.

Mardy Myers has transferred from the PMA to the Division of Statistical and Historical Research of BAE. He will conduct research on dairy marketing.

Samuel Myers has been appointed to the post of Research Associate at Harvard to carry on research under the RMA contract.

W. D. Nicholls, University of Kentucky, recently spent four weeks in England making an intensive study of the English farming setup and management. These studies were made possible by arrangements with the English National Farmers Union of which 95 percent of all farm operators are members.

L. J. Norton, University of Illinois, is on sabbatical leave the first semester and will spend most of his time in Europe. He will make a study of fat and oil demand in cooperation with the Office of Foreign Agricultural Relations.

Russell O. Olson, South Dakota State College, is on leave of absence to pursue graduate study at Iowa State College.

A. L. Owens, Rhode Island State College, returned to his duties September 1, following a year's leave for study at the University of Illinois.

Walter W. Pawson has transferred from the Bureau of Reclamation, Department of the Interior, to work on the economics of conservation in the Northwest as a member of the Division of Farm Management and Costs, BAE, with headquarters at Portland, Ore.

Weber H. Peterson, Clemson College, was a visiting professor at the University of Arkansas during the second session of summer school.

C. W. Pierce while on sabbatical leave from Pennsylvania State College will serve as regional coordinator for the southern regional dairy marketing research project, State College, Mississippi. During the summer Dr. Pierce taught at Cornell after which he attended the Conference of Agricultural Economists at Rome.

Homer J. Preston, who will complete his Ph.D. at Pennsylvania State College in February, has accepted a position with the Cooperative Research and Service Division, FCA.

Mrs. Barbara Reagan, Research Associate, Harvard, has been appointed to the Bureau of Nutrition and Home Economics to assume responsibility for research in levels of living.

Sidney Reagan, at Harvard University on leave from his post as Economist for FHA for the past two years, has been appointed Economist for the PMA to make analyses of fats and oils problems.

Rex Rehnberg joined the Agricultural Economics staff at the University of Arizona September, 1949, after completing his Ph.D. at Purdue.

Thomas C. M. Robinson, who has headed the Farm Employment Section, BAE, for the past three years, has transferred to the State Department as Agricultural Attache in the American Embassy in Canberra, Australia.

George Rockwell has joined the Division of Statistical and Historical Research, BAE, to conduct research on tobacco marketing.

George B. Rogers of the Division of Statistical and Historical Research BAE, has returned from France where he was a member of the United States delegation to Third Session of Contracting Parties General Agreement on Tariffs and Trade.

Anthony Rojko has joined the Division of Statistical and Historical Research. Mr. Rojko was formerly a Marketing Research Agent with the New England Research Council.

Charles F. Sarle, U.S.D.A., is in Turkey making a study of that country's statistical needs. The project, sponsored by the Economic Cooperation Administration, was requested by the Turkish government.

Richard G. Schmitt, Jr., formerly with BAE, Division of Agricultural Finance, has joined the staff of the Rural Electrification Administration in the program analysis section.

O. J. Scoville, BAE, Kansas State College, has been designated regional technical assistant to the sub-committee on soil conservation of the North Central Farm Management Research Committee.

Stanley K. Seaver has returned to the University of Connecticut after a year's sabbatic leave spent at the University of Chicago.

Roy E. Speck, formerly with the Texsun Citrus Exchange and graduate of the University of Texas, has recently joined the staff of the Dried Fruit Division, Fruit and Vegetable Branch, Production and Marketing Administration, U.S.D.A.

Leland Spencer sailed for Europe July 12 to attend the International Dairy Congress in Stockholm, Sweden, and International Conference of Agricultural Economists at Stresa, Italy. Professor Spencer will visit several countries in western Europe where he will study economic conditions in the dairy industry and recent developments in the marketing of fluid milk.

Don Stark returned to the staff of Agricultural Economics at Michigan State College as Extension Specialist in Livestock Marketing on July 1. He has been on leave of absence for one year working with the Detroit Packing Company, a farmers' cooperative company.

Delwin M. Stevens has been appointed Associate Professor of Agricultural Economics, Colorado A & M. He has been doing graduate work on his Ph.D. at the University of Minnesota.

Hugh L. Stewart is now Assistant Head of the Division of Farm Management and Costs, Bureau of Agricultural Economics. He succeeds Neil W. Johnson who became Special Assistant to the Administrator, Agricultural Research Administration, in March 1948.

H. R. Stucky, Extension Specialist in agricultural economics for the Montana Agricultural Extension Service, has just completed a quarter's leave of absence, during which time he has been at the University of Minnesota for advanced study.

Alonzo E. Taylor, director emeritus of the Food Research Institute of Stanford University, died on May 20, 1949, at the age of 78 after a brief illness. Dr. Taylor was one of the founders of the Food Research Institute

and a director from 1921 to 1936. After his retirement he was associated with General Mills, Inc., first as director of research, then as consultant, until 1945. Dr. Taylor was a member of the American War Trade Board in 1917–1919, professor of pathology and physiological chemistry at the University of California from 1899 to 1910, and was Rush professor of physiological chemistry at the University of Pennsylvania from 1910 to 1921. He was the author of several books on food chemistry and human nutrition, papers in research and popular science, and *Corn and Hog Surplus of the Corn Belt* (1932), and *The New Deal and Foreign Trade* (1935).

The Tennessee Agricultural Experiment Station is cooperating with the Mississippi Station on a study of milk marketing in the Memphis milkshed. The Tennessee Station is also cooperating with the Federal Bureau of Agricultural Economics on a study of costs and margins of milk distributors in the Memphis area.

Tennessee and Kentucky Experiment Stations are making a joint study of both the Eastern and Western dark tobacco growers associations.

The Tennessee Agricultural Experiment Station is cooperating with the Production and Marketing Administration, U.S.D.A., in making a study of hedging practices of feed mills in the Southeast.

Tennessee University students majoring in Agricultural Economics have formed a club and will apply for a charter as a student subsidiary of the American Farm Economic Association.

Phil J. Thair has accepted an appointment with the Bureau of Agricultural Economics. He is stationed at the North Dakota Agricultural College, and is in charge of a comprehensive research project on risk, uncertainty and problems of income stabilization in the Great Plains farm economy. This project is carried on jointly by the North Dakota Agricultural Experiment Station and the Bureau of Agricultural Economics.

Gerhard Tintner has returned to Iowa State College after a year's leave of absence in Europe, during which he spent one year in research at the Department of Applied Economics, Cambridge, England. He also taught econometrics at the University of Cambridge and gave lectures at the universities of Dublin, Uppsala, Paris, Bristol, Oxford, Manchester and Hague.

Durward B. Varner joined the staff in Agricultural Economics at Michigan State College on May 10. Mr. Varner has spent the last three years as a student at the University of Chicago and is a pre-war graduate of Texas A and M. At Michigan State College he will participate in the Extension project in market price analysis and public policy in agriculture.

Warren H. Vincent, formerly instructor in Farm Management at Michigan State College, was transferred on May 1 to the position of Extension Specialist in Farm Management (Assistant Professor). Mr. Vincent obtained his Master's degree in Farm Management at Michigan State College in June 1949.

Stanley W. Voelker, Land Economics Division, BAE, has transferred from Fort Collins, Colorado, to North Dakota Agricultural College, Fargo, where he will be working on problems in land and irrigation economics in connection with the Missouri Basin Development research program.

Malcolm E. Wallace, formerly of North Carolina State College, has joined the Agricultural Finance Division of BAE to work in the field of short-term credit.

Arthur J. Walrath has returned to the Division of Land Economics, BAE, after two years with the Department of Agricultural Economics at New Mexico A & M. He will be stationed at Portland, Ore.

Thomas J. Whatley is on leave of absence from the University of Tennessee, studying for his doctorate in Agricultural Economics at Purdue.

Norman V. Whitehair has been appointed Assistant Professor at Kansas State College. He will do extension work in grain marketing.

C. P. Wilson has been granted a leave of absence from Kansas State College to do graduate work at the University of California. Harold Riley will assume Professor Wilson's work in livestock marketing.

Harry S. Wilt has recently been appointed as Assistant Professor in research in Farm Management at Michigan State College. Mr. Wilt has been on the Short Course staff at Michigan State for ten years and has assisted in teaching farm management to students enrolled in the short courses.

Karl T. Wright of Michigan State College has just returned from two months in Europe. He visited ten countries collecting information on the economic aspects of forage production and attended the International Conference of Agricultural Economists at Stresa, Italy.

H. J. Wyngarden, Head of the Economics Department, Michigan State College, since 1943, became Dean of the School of Business and Public Service, July 1, 1949, replacing Dean D. R. Rodney, who has reached retirement age. Charles C. Killingworth will replace Dr. Wyngarden as Head of the Department of Economics.

The American Institute of Cooperation has available an outline for a graduate course in agricultural cooperation which was developed at a workshop this summer preceding the Institute session at the University of Wisconsin, Madison. Also available is the report of the workshop for Extension workers.